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November 3, 1995

FOREWORD

This Manual is issued under the authority of DoD Directive 5000.59, "DoD Modeling and Simulation (M&S) Management," January 4, 1994. Its purpose is to prescribe a uniform glossary of modeling and simulation (M&S) terminology for use throughout the Department of Defense. In addition to the main glossary of terms, this manual includes a list of M&S related abbreviations, acronyms, and initials commonly used within DoD.

This publication is not a substitute for the Department of Defense Dictionary of Military and Associated Terms (JOINT PUB 1-02), which the Secretary of Defense has directed to be used throughout the Department of Defense.

The provisions of this Manual apply to the Office of the Secretary of Defense (OSD), the Military Departments, the Chairman of the Joint Chief of Staff, the Unified and Combatant Commands, the Defense Agencies, and activities administratively supported by OSD (hereafter called "DoD Components").

Send recommended changes to the Manual to:

Defense Modeling and Simulation Office (DMSO)
Attn: Mr. James W. Heusmann
Suite 504,
1901 N. Beauregard St.
Alexandria, Virginia, 22311

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Paul G. Kaminski

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GLOSSARY OF MODELING AND SIMULATION TERMINOLOGY
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PART I
ACRONYMS/ABBREVIATIONS

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A

A2ATD	Anti-Armor Advanced Technology Demonstration
A/D	Analog/Digital
Aa	Achieved Availability
AAAS	American Association for the Advancement of Science
AAAV	Advanced Amphibious Assault Vehicle
AAIS	Advanced Airborne Interceptor Simulator
AAL	ATM Adaptation Layer
AAODL	Atmospheric Aerosols and Optics Data Library
AAP	Advanced Acquisition Plan
AAR	After Action Report
AAR	After Action Review
AAS	Advanced Automation System
AASP	Army Automation Security Program
AASPEM	Air-to-Air System Performance Evaluation Model
AATD	Army Advanced Technology Demonstration(s)
AATIS	Advanced Airfield Command Control Center
ABCSIM	Atmospheric, Biological, and Chemical Simulation
ABE	ALSP Broadcast Emulator
ABM	Armor Breakpoint Model
ABS	Advanced Battle Simulation
ABU	Analog Backup
ACAAM	Air Courses of Action Assessment Model
ACAD	Advanced Computer Aided Design
ACALS	Army Computer-aided Acquisition & Logistics Support
ACAT	Acquisition Category
ACC	Aegis Computer Center
ACCIS	Automated C2 Information System
ACCS	Army Command and Control System
ACDI	Asynchronous Communications Device Interface
ACE	Advanced Campaign Effectiveness Model
ACEC	Army Communications-Electronics Command
ACEM	Air Combat Evaluation Model
ACETEF	Air Combat Environment Test and Evaluation Facility
ACISD	Advanced Computational and Information Sciences Directorate
ACM	ALSP Common Module
ACMI	Air Combat Maneuvering Instrumentation
ACMS	Air Combat Maneuvering Simulator
ACMS	Air Combat Maneuvering System
ACMT	Automated Configuration Management Tool
ACOE	Army Common Operating Environment

ACOM	U.S. Atlantic Command
ACPT	Automated Corporate Planning Tool
ACR	Advanced Concepts and Requirements
ACS	Access Control System
ACSIT	Aegis Combat System Interactive Trainer
ACSM	Assistant Chief of Staff for Information Management
ACT	ALSP Control Terminal
ACT	Architecture Characterization Template
ACTD	Advanced Concept Technology Demonstration
ADA	Name of High Level Computer Programming Language
ADDS	Automated Data Distribution System
ADEPT	Administrative Data Entry for Processing Transmission
ADL	Ada Design Language
ADM	Advanced Development Model
ADM	Acquisition Decision Memorandum
ADMD	Administrative Management Domain
ADMP	Army Data Management Program
ADO	Army Digitization Office
ADP	Automatic Data Processing
ADPA	American Defense Preparedness Association
ADPE	Automatic Data Processing Equipment
ADPSO	Automatic Data Processing Security Officer
ADPSSEP	Automatic Data Processing System Security Enhancement Program
ADPSSO	Automatic Data Processing System Security Officer
ADRG	Arc Digitized Raster Graphics
ADS	Advanced Distributed Simulation
ADS	Automated Data System
ADSIM	Air Defense Simulation
ADSS	Air Defense Simulation System
ADSS	Army Data Standardization System
ADST	Advanced Distributed Simulation Technology
ADTAM	Air Defense Tanker Analysis Model
ADUA	Administrative Directory User Agent
AESAT	Avionics & Electrical Systems Advanced Trainer
AESOP	Army EMP Simulator Operations
AETS	Airborne Electronic Threat Simulator
AFAM	Air Force Acquisition Model
AFATDS	Advanced Field Artillery Tactical Data System
AFEWES	Air Force Electronic Warfare Evaluation Simulator
AFIN	Air Force Information Network
AFIT	Air Force Institute of Technology
AFNET	Air Force Network
AFO	Awaiting Further Occurrence
AFOR	Automated Forces
AFS	Advanced Flight Simulator

AFSCN	Air Force Satellite Control Network
AFSPC	Air Force Space Command
AFWG	Analysis Functional Working Group
AG	Application Gateway
AGCCS	Army Global Command and Control System
AGES	Air to Ground Engagement Simulation
AGRAM	Air-to-Ground Assessment Model
AGRMET	Agricultural Meteorological Model
AHP	Analytic Hierarchical Process
AHPCRC	Army High Performance Computer Research Center
AI	Artificial Intelligence
AI2	Advanced Image Intensification
AID	Automatic Digital Network (AUTODIN) Interface Device
AI-ESTATE	Artificial Intelligence and Expert System Tie to Automatic Test Equipment
AIN	Advanced Intelligent Network
AIRES	Automated Information Retrieval And Expert System
AIRFLOS	Air Flow Over Structures
AIS	Automated Information System
AIS	ALSP (Aggregate Level Simulation Protocol) Infrastructure Software
AISSAP	Automatic Information System Security Assessment Program
AISSO	Automated Information System Security Officer
AITS	Advance Information Technology Systems
AIU	Advanced Interface Unit
AJPO	ADA DoD Joint Program Office (to promote ADA)
ALARM	Advance Low-Altitude Radar Model
ALBAM	Air Land Battle Assessment Model
ALBE	Air Land Battlefield Environment
ALBM	Air Land Battle Management
ALES	Air Land Engagement Simulation
ALISS	Advanced Lightweight Influence Sweep System
ALM	Airlift Loading Model
ALS	ADA language system
ALSP	Aggregate Level Simulation Protocol
ALWSIM	Army Laser Weapon Simulation
AMES	Advanced Multiple Environment Simulator
AMG	Architecture Management Group
AMHS	Automated Message Handling System
AMIP	Army Model Improvement Program
AMM	Advanced Missile Model
AMM	Army Mobility Model

AMME	Automated Multi-Media Exchange
AMPE	Automated Message Processing Exchange
AMPES	Automatic Message Processing Exchange System
AMPS	Automated Mission Planning System
AMPS	Aviation Mission Planning System
AMPS	Association of Modeling, Planning and Simulation
AMSAA	Army Materiel Systems Analysis Activity
AMSDL	Acquisition Management Systems and Data Requirements Control List
AMSEC	Army Model and Simulation Executive Council
AMSMC	Army Model and Simulation Master Catalog
AMSMO	Army Model and Simulation Management Office
AMSMP	Army Modeling and Simulation Management Program
ANDF	Application Neutral Data Format
ANDF	Architecture Neutral Distribution Format
ANL	Argonne National Laboratory
ANM	Automated Network Manager
ANN	Artificial Neural Networks
ANS	Artificial Neural Systems
ANSI	American National Standards Institute
ANSI/SPARC	American National Standards Institute’s Standards Planning and Requirements Committee
Ao	Operational Availability
APHIDS	Advanced Panoramic Helmet Interface Demonstrator System
API	Application Program Interface
APIU	Adaptable Programmable Interface Unit
APL	Applied Physics Laboratory
APL/JHU	Applied Physics Laboratory/Johns Hopkins University
APL/PSU	Applied Physics Laboratory/Penn State University
APL/UW	Applied Physics Laboratory/University of Washington
APM	Advanced Penetration Model
APMM	Activity Planning and Management Model
APMS	Automated Program Management Information System
APP	Application Portability Profile
APRF	Aberdeen Pulse Radiation Facility
APS	Asynchronous Protocol Specification
APSE	ADA Programming Support Environment
ARC	Advanced Research Center
ARES	Advanced Research Electromagnetic Simulator
ARGUS	Advanced Realtime Gaming Universal Simulation
ARI	Army Research Institute (for the Behavioral and Social Sciences)
ARIEM	Army Research Institute of Environmental Medicine
ARL	U.S. Army Research Laboratory
ARPA	Advanced Research Projects Agency (formerly DARPA)
ARPANET	ARPA Network

ARIES	Automated Real-Time Instrumented Experimentation System
ARTBASS	Army Tactical Battlefield Simulation System
ARTDT	Advanced Real-Time Data Tool
ARTE	Ada Run Time Environment
ARTT	Above Real-Time Training
ASAS	All Source Analysis System
ASBAT	Air/Sea Battle Model
ASC	Advanced Simulation Center
ASC	American Standards Committee
ASCII	American Standard Code for Information Interchange
ASCM	Advanced Space Computing Module
ASD	Assistant Secretary of Defense
ASEM	Anti-Sattelite (ASAT) Engagement Model
ASIC	Application-Specific Integrated Circuit
ASIS	Ada Semantic Interface Specification
ASME	American Society of Mechanical Engineers
ASN	Abstract Syntax Notation
ASN	Assistant Secretary of the Navy
ASSIST	Acquisition Streamlining and Standardization Information System
ASTAMIDS	Airborne Standoff Minefield Detection System
ASTC	Advanced Simulation Technology Center
ASTO	Advanced Systems Technology Office
ASUMS	Aircraft Survivability with Missiles and Stealth
ATASS	Adaptive Training, Analysis, and Simulation System
ATB	Analytical Tool Box
ATCCS	Army Tactical Command and Control System
ATD	Advanced Technology Demonstration
ATDL	Army Tactical Data Link
ATDL-1	Army Tactical Data Link-One
ATDP	Advanced Technology Development Plan
ATE	Automatic Test Equipment
ATF	Advanced Tactical Fighter
ATFM&S	Acquisition Task Force on Modeling and Simulation
ATEMS	Advanced Threat Emitter Simulator
ATEWES	Advanced Tactical Electronic Warfare Environment Simulator
ATM	Asynchronous Transfer Mode
ATRJ	Advanced Threat Radar Jammer
ATRJ	Advanced Tactical Radar Jammer
ATS	Advanced Threat Simulator
ATS	Automated Tracking System
ATS	Automatic Telecommunication System

ATSS	Automatic Test Support System
ATTD	Advanced Technology Transition Demonstration
ATTD-SAG	ATTD Senior Advisory Group
ATV	ALSP (Aggregate Level Simulation Protocol) Translator Validator
ATVSS	Automatic Tracking and (with) Video Scene Simulation System
AU	Access Unit
AURA	Army ;Unit Resiliency Analysis Model
AUT	Application Under Test
AVO	ADA Validation Office, part of AJPO
AWACS	Airborne Warning and Control System
AWD	Advanced Warfighting Demonstration
AWD	Alternate World Database
AWE	Advanced Warfighting Experiment
AWESS	Automatic Weapon Effect Signature Simulator
AWIPS	NOAA's Advanced Weather Interactive Processing System
AWIS	Army World-Wide Military Command and Control Information Systems
AWSIM	Air Warfare Simulation

B

BAA	Broad Area Announcement
BASEWAM	Battlefield Surveillance Electronic Warfare Analysis Model
BASOPS	Base Operating Information System
BAST	Board on Army Science and Technology (part of National Academy of Sciences)
BATTS	Basic Air Tactics Trainer
BAUD	Characters Xmitted/sec Serially From a Computer
BBN	Broad Band Noise
BBS	Bulletin Board System
BBS	Brigade/Battalion Simulation System
BCBL	Battle Command Battle Lab
BCC	Base Communications-Computer Center
BCCS	Battlefield Command and Control System
BCOM	Battalion Combat Outcome Model
BCS	Battery Computer System
BCTP	Battle Command Training Program
BDS	Battlefield Distributed Simulation
BDS-D	Battlefield Distributed Simulation - Developmental
BEAMS2-D	Battlefield Emission and Multiple Scattering, 2-D
BEES	Battlefield Environmental Effects Software
BER	Basic Encoding Rules
BER	Bit Error Rate
BERT	Bit-Error-Rate Test
BES	Background Environment Simulator
BEWSS	Battlefield Environment Weapon System Simulation
BFA	Battlefield Funcitonal Area
BFM	Battlefield Forecast Model
BFIT	Battle Force Import Trainer
BFTT	Battle Force Tactical Trainer
BG	Battle Group
BGEM	Battle Group Effectiveness Model
BIA	Battlefield Information Architecture
BICES	Battlefield Information Collection & Exploitation System
BICM	Battlefield Intelligence Collection Model
BIS	Built-in Simulation
BIS	Battlespace Information System
BISDN	Binary Integrated Services Digital Network
BISDON	Broadband Integrated Services Digital Network
BIT	Built-In Test

BITE	Built-in-Test Equipment
BLDM	Battalion Level Differential Model
BLERT	Block-Error-Rate Test
BLOB	Binary Large Object
BMC3	Battle Management, Command, Control, and Communications
BMD	Ballistic Missile Defense
BMDES	Ballistic Missile Defense Engagement Simulation
BMDO	Ballistic Missile Defense Organization
BMTA	Backbone Message Transfer Agent
BODAS	Brigade Operations Display and AAR System
BODESIM	Barrier/Obstacle Deployment and Effectiveness Simulation
BOS	Basic Operating System
BOSM	Balance of Sustainment Model
BOSS	Binary Object Storage System
BPS	Battlefield Planning System
bps	Bits Per Second
BRAC	Base Realignment and Closures
BRDL	Biomedical Research and Development Laboratory
BRIDGESIM	Bridge Simulator
BRITE	Basic Research in Industrial Technologies for Europe
BRL	Ballistic Research Laboratory
BSC	Battle Simulation Center
BST	Basic Skills Trainer
BT	Behavioral Taxonomy
BTA	Best Technical Approach
BUCS	Back-up computer system
BULLET	Battalion/Unit Level Logistics Evaluation Tool
BUR	Bottom-up Review
BW	Bandwidth

C

C-CS	Communications-Computer Systems
C2	Command and Control
C2I	Command, Control, and Intelligence
C2IS	C2 Information Systems
C2W	Command and Control Warfare
C3	Command, Control, and Communications
C3I	Command, Control, Communications, and Intelligence
C3I/IS	C3I/Information Systems
C3CM	Command, Control and Communications Countermeasures
C3S	C3 Systems
C4	Command, Control, Communications, and Computers
C4I	Command, Control, Communications, Computers and Intelligence
C4I2	Command, Control, Communications, Computers, and Intelligence Integration
C4IFTW	C4I for the Warrior
C4SMP	C4 System Master Plan
CAA	U.S. Army Concepts Analysis Agency
CALS	Computer Aided Acquisition and Logistics Support
CAAM	Composite Area Analysis Model
CAAN	Combined Arms Assessment Network
CAC	Combined Arms Center
CACDA	Combined Arms Combat Development Activity
CACE	Computer-Aided Cost Estimating
CACEAS	Computer-Assisted Circuit Engineering and Allocating System
CACTIS	Community Automated Counter-Terrorism Intelligence System
CAD	Computer-Aided Design
CAD/CAM	Computer Aided Design/Computer Aided Manufacturing
CADD	Computer Aided Design and Drafting
CADDS	Computer Aided Design and Drafting System
CADE	Computer-Aided Design Equipment
CADEX	Computer Adjunct Data Evaluator - X
CADIS	Communication Architecture for Distributed Interactive Simulation
CADMAT	Computer-Aided Design, Manufacture and Test
CADS	Computer-Assisted Display System
CAE	Computer Aided Engineering
CAE	Common Application Environment

CAESAR	Computer-Aided Exploration of Synthetic Aperture Radar
CAETI	Computer-Aided Education and Training Initiative
CAGE	Commercial and Government Entity
CAI	Computer Aided Instruction
CALOW	Contingency/Limited Objective Warfare
CAL	Computer Aided Learning
CAM	Computer Aided Manufacturing
CAMAC	Computer-Aided Measurement and Control
CAMD	Computer Assisted Molecular Design
CAMDSS	Common Architecture for Model Development and Simulation Support
CAMEO	Computer Aided Management of Emergency Operations
CAMERA	Computational Algorithm for Missile Exhaust Radiation
CAMMS	Condensed Army Mobility Model System
CAMPS	Computer Aided Mission Planning System
CAPE	Computer Aided Project Engineering
CAPS	Computer-Aided Paperless System
CAPP	Computer-Aided Process Plan
CARD	Computer-Aided Remote Driving
CARDS	Central Archive for Reusable Defense Software
CARDS	Comprehensive Approach to Reusable Defense Software
CARE	Computer Assistance Resource Exchange
CARES	Cratering and Related Effects Simulation
CASE	Computer Assisted Software Engineering
CASE	Computer Aided Software Engineering
CASE	Computer-Assisted Systems Engineering
CASES	Capabilities Assessment Expert System
CASMO	Combat Analysis Sustainability Model
CASS	Consolidated Automated Support System
CAST	Computer-Aided Software Testing
CASTFOREM	Combined Arms And Support Task Force Evaluation Model
CATIA	Computer-Aided Three Dimensional Interactive Application
CATIS	Computer-Assisted Tactical Information System
CATIS	Computer-Aided Tactical Information System
CATT	Combined Arms Tactical Trainer
CAU	Cell Adapter Unit
CAX	Computer Aided Exercise
CAX	Combined Arms Exercise
CBAM	Combat Base Assessment Model
CBD	Commerce Business Daily
CBI	Computer Based Instruction
CBL	Computer Based Learning
CBO	Congressional Budget Office

CBR	Constant Bit Rate
CBRS	Concept Based Requirement System
CBS	Corps Battle Simulation
CBS-ATCCS	Corps Battle Simulation - Army Tactical Command and Control System Interface
CBT	Computer Based Training
CCB	Configuration Control Board
CCBD	Configuration Control Board Directives
CCD	Camouflage, Concealment and Deception
CCEB	Combined Communications-Electronics Board
CCF	Central Computer Facility
CCH	Computer-Controlled Hostiles
CCIB	Command and Control Interoperability Board
CCIS	Command and Control Information System
CCOMEN	Conventional Collateral Mission Effectiveness Model
CCSIL	Command and Control Simulation Interface Language
CCSP	Consolidated Computer Security Program
CCTB	Close Combat Test Bed
CCTT	Close Combat Tactical Trainer
CCU	Computer Control Unit
CDA	Central Design Activity
CDA	Cognitive Decision Aids
CDAd	Component Data Administrator
CDB	Common Data Base
CDD	Common Data Dictionary
CDDI	Copper Distributed Data Interface
CDE	Common Desktop Environment
CDI	Compact Disk Interactive
CDIN	CONUS Defense Integrated Network
CDP	Classified Data Processing
CD-R	Compact Disk - Recordable
CDRL	Contract Data Requirements List
CD-ROM	Compact Disk - Read Only Memory
CDS	Congressional Data Sheets
CDU	Control Display Unit
CD-V	Compact Disk - Video
CD-WO	Compact Disk - Write Once
CECOM	Communications Electronics Command
CEESIM	Combat Electromagnetic Environment Simulator
CEM	Concepts Evaluation Model
CENTCOM	U.S. Central Command
CEP	Circular Error, Probable
CERS	Combat Environment Realism System
CERT	Computer Emergency Response Team

CES	Cognitive Environment Simulator
CET	Computers and Electronic Technology
CEWI	Communications Electronic Warfare Intelligence
CFA	Center for Architecture (JIEO)
CFAW	Contingency Force Analysis War Game
CFDB	Conventional Forces Database
CFE	Conventional Forces in Europe
CFE	Contractor Furnished Equipment
CFE	Center for Engineering
CFII	Center for Integration and Interoperability
CFOR	Command Forces
CFS	Center for Standards
CGF	Computer Generated Forces
CGI	Computer Generated Imagery
CGI	Computer Graphics Interface
CGM	Computer Graphics Metafile
CHANCES	Climatological and Historical Analysis of Cloud for Environmental Simulations
CHAS	Chemical Hazard Assessment System
CHS	Common Hardware and Software
CI	Configuration Item
CICS	Customer Information Control System
CIDS	Computerized Information Delivery Service
CIE	Computer Integrated Engineering
CIE-PAT	Computer Integrated Engineering-Process Action Team
CIG	Computer Image Generation
CIG	Computer Image Generator
CIITA	Computer Improved Instructor’s Training Aid
CIKS	Cryptographic Ignition Key
CIM	Computer Integrated Manufacturing
CIM	Corporate Information Management
CIM/EI	Corporate Information Management/Enterprise Integration
CIMMD	Close-In Man=Portable Mine Detector
CIMNET	Center for Information Management Network
CIMP	Corporate Information Management Plan
CIMP	Cartographic Imaging Modeling Program
CINC	Commander in Chief
CINCLANTFLT	Commander-in-Chief Atlantic Fleet
CINCPACFLT	Commander-in-Chief Pacific Fleet
CIO	Central Imagery Office
CIP	Combat Information Processor
CIP	Capital Investment Plan
CIP	Combined Interoperability Program
CIRIS	Completely Integrated Reference Instrumentation System
CIRRUS	Clouds, IR, Real, for Use in Simulations

CIS	CASE Integration Services
CIS	Combat Instruction Set
CIS	Command Information System
CISC	Complex Instruction Set Computer
CISS	Center for Information Systems Security (JIEO)
CIU	Cell Interface Unit
CIWG	Communications Interoperability Working Group
CJCS	Chairman of the Joint Chiefs of Staff
CL	Closed Loop
CLAP	C++ Library Actor Programming
CLD	Center Line Data
CLDGEN	Cloud Scene Generator
CLDSIM	Cloud Simulation
CLEAR	Campaign Logistics Expenditure And Replenishment Model
CLNP	Connectionless Network Protocol
CLNS	Connectionless Network Service
CM	Configuration Management
CMAS	Crisis Management ADP System
CMASS	Counterdrug Modeling and Simulation System
CMC	Commandant of the Marine Corps
CMI	Computer Managed Instruction
CMIP	Common Management Information Protocol
CMIS/P	Common Management Information Services & Protocols
CMMS	Conceptual Models of the Mission Spaces
CMP	Configuration Management Plan
CMR	Common Model Repository
CMS	Combat Mission Simulator
CMT	Confederation Management Tool
CMTC	Combat Maneuver Training Center
CMTC-IS	Combat Maneuver Training Center-Instrumented Systems
CMUES	Campaign Model Utilizing Environmental Simulator
CMWG	Configuration Management Working Group
CN	Communications Network
CNA	Center for Naval Analyses
CNC	Communications Network Control
CNMS	Consolidated Network Management System
CNO	Chief of Naval Operations
CNR	Combat Net Radio
COA	Course of Action
COADS	Comprehensive Ocean Atmosphere Data Set
COBOL	Common Business Oriented Language
COBRA	Combat Outcome Based on Rules of Attrition

COCO	Contractor Owned, Contractor Operated
COE	Common Operating Environment
COEA	Cost and Operational Effectiveness Analysis
COI	Critical Operational Issue
COLD	Computer Output to Laser Disk
COM	Computer Output Microform
COMBIC	Combined Obscurant Model for Battlefield-Induced Contaminants
COMBIC/STATIC	Combined Obscuration Model for Battlefield Induced Contaminants/Statistical Texturing Applied to Battlefield Induced Contaminants
COMINT	Communications Intelligence
COMNET	Communications Network
COMPASS	Common Operational Modeling, Planning, and Simulation Strategy
COMPUSEC	Computer Security
COMSAT	Communications Satellite
COMSEC	Communications Security
CONMOD	Conflict Model
CONOPS	Concept of Operations
CONPLAN	Contingency Plan
CONPLAN	Concept Plan
CONUS	Continental United States
CONWEP	Conventional Weapons Effects Code
Copernicus	Navy’s C3 Architecture
CORBA	Common Object Request Broker Architecture
CORBAN	Corps Battle Analyzer
CORDIVEM	Corps/Division Evaluation Model
Corn	Computer Resource Nucleus
COSE	Common Open Software Environment
COTS	Commercial Off The Shelf
COVART	Computation of Vulnerable Area and Repair Time
CPCI	Computer Program Configuration Item
CPU	Central Processing Unit
CRASOF	Combat Rescue and Special Operations Forces
CRB	Configuration Review Board
CRDA	Cooperative Research & Development Agreement
CRLCMP	Computer Resource Life Cycle Management Plan
CRMP	Computer Resourses Management Plan
CROESUS	Navy plan for Copernicus
CROSSBOW-S	Construction of a Radar to Operationally Simulate Signals Believed to Originate Within the Soviet Union
CRT	Cathode Ray Tube
CRWG	Computer Resource Working Group
CRYPTO	Cryptographic
CSC	Computer Software Component

CSCI	Computer Software Configuration Item
CSE	Common Support Equipment
CSIDS	CENTCOM/SOCOM Integrated Data System
CSII	Center for Systems Interoperability and Integration
CSL	Computer Systems Laboratory (part of NIST)
CSPM	Communication System Performance Model
CSSM	Cloud Scene Simulation Model
CSPEI	Computer Software Product End Item
CSRDF	Army Crew Station Research and Development Facility
CSS	Communications Support System
CSSBL	Combat Service Support Battle Lab
CSSCS	Combat Service Support Computer System
CSSM	Cloud Scene Simulation Model
CSSTSS	Combat Service Support Tactical Simulation System
CSU	Computer Software Unit
CT	Computer Tomography
CTAPS	Contingency Theater Automated Planning System
CTC	Critical Technical Characteristics
CTE	Center for Test and Evaluation
CTEIP	Central Test And Evaluation Investment Program
CTF	Combined Task Force
CTIS	Combat Terrain Information System
CTIS	Command Tactical Information System
CTLS	Concurrent Theater Level Simulation
CTOS	Convergent Technologies Operating Systems
CTR	Chesapeake Test Range
CTTRA	Common Test and Training Range Architecture
CUTM	Computer Understandable Terrain Model
CVF	Compressed Volume File
CVGA	Color Video Graphics Array
CWASAR	Cruise Weapon Analysis Simulation and Research
CWTSAR	Chemical Warfare Theater Simulation of Air Base Resources

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D

D/A	Digital to Analog
DA	Department of the Army
DA	Developing Agency (Navy)
DAA	Designated Approving Authorities
DAB	Defense Acquisition Board
DACS	Data and Analysis Center for Software
DACS	Digital Access and Cross-Connect System
DAd	Data Administrator
DAdm	Data Administration
DADS	Dynamic Analysis and Design System
DAE	Defense Acquisition Executive
DAES	Defense Acquisition Executive Summary
DAG	Data Authentication Group
DAG	Data Analysis Group
DAI	Distributed Artificial Intelligence
DAISY	Defense Automated Information System
DAP	Data Access Protocol
DAP	Directory Access Protocol
DAP	Data Administration Program
DAPG	Data Analysis Programming Group
DAPM	Data Administration Program Manager
DAPM	Domain Analysis Process Model
DAPMO	Data Administration Program Management Office
DAPS	Data Acquisition and Processing System
DAR	Defense Acquisition Regulation
DARIC	Defense Automation Resources Information Center
DARCOM	U.S. Army Materiel Development and Readiness Command
DARMP	Defense Automation Resources Management Program
DARO	Defense Airborne Reconnaissance Office
DARPA	Defense Advanced Research Projects Agency (renamed ARPA)
DASD	Direct Access Storage Device
DASD	Deputy Assistant Secretary of Defense
DASD(IM)	Deputy Assistant Secretary of Defense for Information Management
DASP	Data Administration Strategic Plan
DASS	Digital Acoustic Sensor Simulator
DATS	Data Automated Tower Simulator
DAU	Data Acquisition Unit
DAWIA	Defense Acquisition Workforce Improvement Act

DAWN	Defense Attache Worldwide Network
db	Decibel
DBA	Direct Budget Authority
DBA	Design-based Analysis
DBA	Direct Budget Authority
DBAd	Data Base Administrator
DBAdm	Data Base Administration
DBD	Data Base Document
DMGMP	Data Base Generation/Modification Program
DBMS	Data Base Management System
DBOF	Defense Business Operating Fund
DCA	Data Collection and Analysis
DCA	Defense Communications Agency (now DISA)
DCAA	Defense Contract Audit Agency
DCAC	Digital Concepts Analysis Center
DCAS	Defense Contract Administrative Services
DCD	Directorate for Combat Developments
DCE	Distributed Computing Environment
DCI	Data Communication Interface
DCID	Director for Central Intelligence Directive
DCN	Defense Communications Network
DCP	Decision Coordinating Paper
DCPS	Data Communications Protocol Standards
DCS	Defense Communications System
DCSINT	Deputy Chief of Staff for Intelligence
DCSLOG	Deputy Chief of Staff for Logistics
DCSOPS	Deputy Chief of Staff for Operations and Plans
DCSPER	Deputy Chief of Staff for Personnel
DCSTPM	Deputy Chief of Staff for Technology Planning and Management
DCT	Desktop Computer Terminal
DCT	Digital Communication Terminal
DCTN	Defense Commercial Telephone Network
DCW	Digital Chart of the World
DD/DS	Data Dictionary/Directory System
DDA	Domain Defined Attribute
DDARS	Distributed Data Archive and Retrieval System
DDBMS	Distributed Database Management System
DDI	Director of Defense Information
DDL	Data Definition Language
DDM	Distributed Data Management
DDN	Defense Data Network
DDR&E	Director of Defense Research and Engineering
DDR	DoD Data Repository
DDRS	Defense Data Repository System
DDS	Distributed Data System
DDS	Digital Data Service

DDS	Direct Digital Synthesizer
DDS	Distributed Defense Simulation
DDSS	Distributed Defense Simulation System
DEA	Data Exchange Agreement
DECA	Digital Electronic Control Assembly
DECCO	Defense Commercial Communications Office
DED	Data Extraction Device
DEEM	Dynamic Environmental Effects Model
DEF	Data Exchange Format
DEM	Digital Elevation Model
DES	Data Encryption Standard
DES	Digital Encryption Standard
DESA	Defense Evaluation Support Agency
DESC	Defense Electronics Supply Center
DESCEM	Dynamic Electromagnetic Systems Combat Effectiveness Model
DESP	Data Element Standardization Program
DET	Dynamic Environment and Terrain
DEWCOM	Divisional Electronic Warfare Combat Model
DFAD	Digital Feature Analysis Data
DFARS	Defense Federal Acquisition Regulation Supplement
DFMS	Data File Management System
DFOM	Derived Federation Object Model
DFRM	Digital RF Memory
DFSAM	Direct Fire Stand-Alone Model
DGCC	Defense Information Systems Agency Global Control Center
DGDEM	Dynamic Generalized Digital Environmental Model Data Base
DGIS	Direct Graphics Interface Standard
DGIWG	Digital Geographic Information Working Group
DGSA	Defense Goal Security Architecture
DGTS	Dynamic Ground Target Simulator
DHIS	Distributed Heterogeneous Information Systems
DI	Date Integrity
DI	Dismounted Infantry
DIA	Defense Intelligence Agency
DIB	Defense Information Base
DIB	Directory Information Base
DICE	Distributed Interactive C3I Effectiveness Simulation Project
DICE	DARPA Initiative for Concurrent Engineering
DID	Data Item Description
DIDHS	Deployed Intelligence Data Handling System

DIDOP	Digital Image Data Output Product
DIF	Data Interchange Format
DIGEST	Digital Geographic Information Exchange Standard
DII	Defense Information Infrastructure
DIICC	Defense Information Infrastructure Control Concept
DIM	Director of Information Management
DIME	Digital Integrated Modeling Environment
DIRSP	Dynamic Infrared Scene Projector
DIS	Distributed Interactive Simulations
DIS	Defense Information System
DISA	Defense Information Systems Agency
DISA/CI	Defense Information Systems Agency/Center for Information
DISA-IS	DISA Information System
DISANet	DISA Information Network
DISC	Defense Information System Council
DISC4	Director of Information Systems Command, Control, Communications, and Computers
DISN	Defense Information Systems Network
DISP	Directory Information Shadowing Protocol
DISS	Distributed Interactive Simulation and Stimulation
DISSIT	Distributed Interactive Simulation Synthesis with Interactive Television
DISSP	Defense Information System Security Program
DITPRO	Defense Information Technical Procurement Office
DIVE	Dismounted Infantry in a Virtual Environment
DKP	Distributed Knowledge Processing
DL	Data Link
DL	Distance Learning
DLA	Defense Logistics Agency
DLI	Data Link Interface
DLMS	Digital Land Mass System
DLPS	Data Links Processor System
DMA	Defense Mapping Agency
DMAP	Data Management and Analysis Plan
DMD	Digital Message Device
DME	Distributed Management Environment
DME	Distance Measuring Equipment
DMF	Data Management Facility
DMRD	Defense Management Review Decision
DMG	Digital Map Generator
DMR	Defense Management Review
DMRD	Defense Management Report Decision
DMS	Digital Modeling and Simulation
DMS	Distributed Models and Simulations
DMS	Defense Message System
DMSCC	Defense Modeling and Simulation Coordination Center

DMSI	Defense Modeling and Simulation Initiative
DMSIS	Defense Modeling and Simulation Information System
DMSO	Defense Modeling and Simulation Office
DMSP	Defense Message System Program
DNA	Defense Nuclear Agency
DNSIX	DoDIIS Network Security for Information Exchange
DNVT	Digital Non-Secure Voice Telephone
DOCATS	Document Catalog System
DoD	Department of Defense
DODCSEC	DoD Computer Security Evaluation Center
DoDD	DoD Directive
DoDDir	Department of Defense Directive
DoDDS	Department of Defense Dependents Schools
DoDI	DoD Instruction
DoDInst	Department of Defense Instruction
DoDIIS	DoD Intelligence Information System
DODISS	DoD Index of Specifications and Standards
DoDM	DoD Manual
DoDMSEA	DoD M&S Executive Agent
DoE	Department of Energy
DOE	Distributed Object Environment
DOF	Degrees of Freedom
DOIM	Directors of Information Management
DoJ	Department of Justice
DOMF	Distributed Object Management Facility
DON	Department of the Navy
DOORS	Demonstration of Dynamic Object Oriented Requirements System
DOS	Disk Operating System
DoS	Department of State
DOT	Distributed Object Technologies
DoT	Department of Transportation
DOTBF	Digitization of the Battlefield
DOTML	Doctrine, Organization, Training, Material, and Leadership
DOW	Day of the Week
DP	Data Processing
DPA	Demand Protocol Architecture
DPA	Defense Production Act
DPDB	Digital Product Data Base
DPG	Defense Planning Guidance
DPG	Dugway Proving Ground
DPI	Data Processing Installation
DQSO	Defense Quality and Standardization Office

DR	Dead Reckoning
DRAM	Dynamic Random Access Memory
DRB	Defense Review Board
DRDA	Distributed Relational Data Base Architecture
DREN	Defense Research and Engineering Network
DRFM	Digital Rf Memory
DRG	Defense Research Group (NATO)
DRLMS	Digital Radar Landmass Simulator
DRN	Data Representation Notation
DRPM	Direct Reporting Program Manager
DRRB	Data Requirements Review Board
DRTWG	Data and Repositories Technology Working Group
DRU	Data Retrieval Unit
DS	Digital Signal Direct Support
DSARC	Defense Systems Acquisition Review Committee
DSB	Defense Science Board
DSCS	Defense Satellite Communications System
DSE	Data Storage Equipment
DSE	Dynamic Synthetic Environments
DSF	Display Simulation Facility
DSI	Defense Simulation Internet
DSMAC	Digital Scene Matching Area Correlator
DSMC	Defense Systems Management College
DSN	Defense Switching Network [formerly Autovon]
DSREDS	Digital Storage and Retrieval Engineering Data System
DSRS	Defense Software Repository System
DSS	Decision Support System
DSS	Digital Signature Standard
DSSA	Domain-Specific Software Architecture
DSSCS	Defense Special Security Communications System
DSSE	Developmental Software Support Environment
DSSEP	Developmental Software Support Environment Plan
DSSP	Defense Standardization and Specification Program
DSSSL	Document Style Semantics and Specification Language
DSU	Digital Signal Unit
DSVT	Digital Secure Voice Terminal
DTAD	Digital Terrain Analysis Data
DTAMS	Digital Terrain Analysis Mapping System
DTAP	Defense Technology Area Plan
DTE/DCE	Data Terminal Equipment/Data Circuit-Terminating Equipment
DTED	Digital Terrain Elevation Data
DTIC	Defense Technical Information Center
DTLS	Distributed Theater Level Simulation
DTM	Digital Terrain Matrix

DTMP	Data Communications Protocol Standards Technical Management Plan
DTOP	Digital Topographic Data
DTS	Digital Terrain System
DVW	Dynamic Virtual Worlds
DWS	Distributed Wargaming System

E-MAIL	Electronic Mail
E2DIS	Environmental Effects for Distributed Interactive Simulation
E3	End-To-End Encryption
E3	Electromagnetic Environmental Effects
EA	Executive Agent
EA	Environmental Assessment
EA	Evolutionary Acquisition
EA	Evaluation Authority
EAC	Echelon Above Corps
EAD	Executive Agent Developer
EADSIM	Extended Air Defense Simulation
EADTB	Extended Air Defense Test Bed
EAROM	Electrically Alterable Read Only Memory
EBB	Electronic Bulletin Board
EBCDIC	Extended Binary Coded Decimal Interchange Code
EBM	Entity Based Model
EC	Electronic Combat
ECCM	Electronic Counter Countermeasures
ECM/EOCM	Electronic Countermeasures/Electro-Optical Countermeasures
ECM	Electronic Countermeasures
EC/EDI	Electronic Commerce / Electronic Data Interchange
ECDES	Electronic Combat Digital Evaluation Simulation
ECDIS	Electronic Chart Display and Information System
ECESL	Electronic Combat Evaluation and Simulation Laboratory
ECMA	European Computer Manufacturers Association
ECP	Engineering Change Proposal
ECSRL	Electronic Combat Simulation Research Laboratory
ECU	Environmental Control Unit
EDECSIM	Extended Directed Energy Combat Simulation
EDI	Electronic Data Interchange
EDI	Electronic Document Interchange
EDIF	Electronic Document Interchange Format
EDIFACT	Electronic Data Interchange for Administration, Commerce, and Transportation
EDIM	Enhanced Diagnostic Inference Model
EDM	Engineering Development Model
EDMIS	Engineering Drawing Management Information System
EDP	Electronic Data Processing
EEAT	Environmental Effects Architecture Toolkit
EEI	External Environment Interface
EEM	Environmental Event Modeler

EEPROM	Electrically Erasable/Programmable Read Only Memory
EGA	Enhanced Graphics Adapter
EGM	Earth Gravity Model
EHP	Entity Handover Protocol
EM	Electro-magnetic
EMA	Electronic Messaging Association
EMB	Extended Memory Block
EMIS	Environmental Management Information System
EMP	Electromagnetic Pulse
EMPRESS	EMP Radiation Environment Simulator for Ships
EMS	Engineering Modeling Software
ENIAC	Electronic Numerical Integrator and Computer
ENSOP	Environmental/Nuclear Simulation Oversight Panel
ENWGS	Enhanced Naval Warfare Gaming System
ENWGS	Enhanced Naval Wargaming System
EO	Electro-Optical
EOB	Electronic Order of Battle
EOC	End of Conversion
EOD	Erasable Optical Disk
EOF	End of File
EOI	End of Identity
EOJ	End of Job
EOSAEL	Electro-Optical Systems Atmospheric Effects Library
EOSDIS	Earth Observing System Data and Information System
EOSS	Electro-Optical Simulation System
EOTDA	Electro-Optical Tactical Decision Aids
EPL	Elint Parameter List
EPROM	Electronic Programmable Read Only Memory
E-R	Entity-Relationship Model
E&R	Exercises and Rehearsals
ERD	Entity Relationship Diagram
ERDAS	Earth Resources Data Analysis System
ERIM	Environmental Research Institute of Michigan
EROM	Erasable Read-Only Memory
ESAMS	Enhanced Surface-to-Air Missile Simulation
ESD	Exploitation Support Data
ESDD	Earth Science Data Directory
ESDI	Enhanced Small Data Interface
ESP	External Simulation Protocol
ESPDU	Entity State Protocol Data Unit
ESPRIT	European Strategic Program for R&D in Information Technologies
ESQL	Extended Structured Query Language
ESTEL	E-2C Simulation Test and Evaluation Laboratory

ETDA	Environmental Tactical Decision Aids
ETM	Enhanced Thematic Mapping
ETMO	Education, Training and Military Operations
EWIR	Electronic Warfare Integrated Reprogrammable Database
EWTES	Electronic Warfare Threat Environment Simulator
EXCIMS	Executive Council for Modeling and Simulation

F

FAA	Federal Aviation Agency
FADAC	Field Artillery Digital Automatic Computer
FAMSIM	Family of Simulations
FAPM	Functional Activity Program Manager
FAR	Federal Acquisition Regulation
FAST	Framework for Advanced Simulation Technology
FAST	Field Assistance in Science and Technology
FASTC	Foreign Aerospace Science and Technology Center
FDAd	Functional Data Administrator
FDB	Functional Description of the Battlespace
FDDI	Fiber Digital Data Interface
FDM	Force Design Model
FEA	Functional Economic Analysis
FEBA	Forward Edge of the Battle Area
FECFR	Fidelity, Exercise Control, and Feedback Requirements
FEMA	Federal Emergency Management Agency
FFRDC	Federally Funded Research and Development Centers
FI	Field Instrumentation
FILO	First In, Last Out
FIM	Functional Information Manager
FIP	Federal Information Process
FIPC	Federal Information Processing Center
FIPS	Federal Information Processing Standards
FIRMA	Federal Information Resources Management Act
FIRMR	Federal Information Resources Management Regulation
FIS	Federal Information System
FIWG	Field Instrumentation Working Group
FLOT	Forward Line of Own Troops
FLS	Force Level Simulation
FMF	Fleet Marine Force
FMFM	Fleet Marine Force Manual
FMS	Foreign Military Sales
FOC	Full Operational Capability
FODA	Feature-Oriented Domain Analysis
FODDS	Fact-Oriented Data Distribution System
FOF	Force-on-Force
FOHMD	Fiber-Optic Helmet-Mounted Display
FOHMD	Fiber-Optic Helmet-Mounted Device
FOIA	Freedom of Information Act

FOM	Federation Object Model
FON	Fiber Optic Network
FORCEM	Force Evaluation Model
FORCEGEN	Force Generation for Modeling and Simulation
FORCEM	Force Concepts Evaluation Model
FORGE	Force Evaluation Model Gaming Evaluator
FOV	Field Of View
FPDC	Federal Procurement Data Center
FPI	Function Process Improvement
FQT	Formal Qualification Testing
FRAM	Fleet Requirements Analysis Model
FRT	Faster than Real Time
FS	Flight Simulators
FSCATT	Fire Support Combined Arms Tactical Trainer
FSK	Frequency Shift-Keying
FSM	Finite State Machine
FSTC	Foreign Systems Technology Center (Army)
FSU	Former Soviet Union
FTAM	File Transfer, Access and Management
FTM	Fault Tree Mode
FTP	File Transfer Protocol
FTS	Full Threat Simulator
FTT	Field Tactical Trainer
FV	Functional Validation
FWG	Functional Working Group
FWS	Flight and Weapons Simulator
FY	Fiscal Year
FYDP	Future-Year Defense Plan

G

G-WARS	Ground Wars (Computer simulation model)
GAO	General Accounting Office
GATERS	Ground Air Teleoperated Robotic System
GCCS	Global Command and Control System
GCDIS	Global Change Data and Information System
GDD/D	Global Data Dictionary and Directory
GDDM	Graphics Data Display Manager
GDEM	Generalized Digital Environmental Model
GDI	Graphics Device Interface
GDIP	General Defense Intelligence Program
GDMS	Global Data Management System
GDSS	Global Decision Support System
GENESSIS	Generic Scene Simulation Software
GEOLOC	Geographic Location
GEOREF	Geographic Reference
GFE	Government Furnished Equipment
GFI	Government Furnished Information
GFM	Government Furnished Materials
GFP	Government Furnished Property
GFS	Government Furnished Software
G/IDEP	Government/Industry Data Exchange Program
GIAC	Graphical Input Aggregate Control
GICOD	Good Idea Cutoff Data
GIF	Graphics Interchange Format
GII	Global Information Infrastructure
GIN	Graphics Input
GIS	Geographic Information System
GKS	Graphical Kernel System
GLM	General Linear Models
GNMP	Government Network Management Profile
GMT	Greenwich Mean Time
GOB	Ground Order of Battle
GOCO	Government-Owned, Contractor Operated
GOE	Government Owned Equipment
GOGO	Government Owned, Government Operated
GOSC	General Officer Steering Committee
GOSIP	Government Open System Interconnection Protocol
GOTS	Government-Off-the-Shelf
GRSIM	Ground Warfare Simulation
GSA	General Services Administration
GSCC	Global Simulation Coordination Center

GSM	Global Shared Memory
GSS	Ground Station Simulator
GST	Greenwich Sidereal Time
GTA	Grafenwoehr (Germany) Training Area
GTCT	Global Tropical Cyclone Tracks Data Base
GTDB	Generic Transformed Data Base
GTE	Ground Threat Emitter
GTM	Ground Truth Model
GTMV	Ground Target Modeling and Validation
GTRI	Georgia Tech Research Institute
GTWAPS	Global Theater Weather Analysis and Prediction System
GUARDFIST	Guard Unit Armory Device Full Crew Interactive Simulation Trainer
GUI	Graphical User Interface
GWEF	Guided Weapons Evaluation Facility

H

H/W	hardware
HAC	House Appropriations Committee
HAMPS	Host AUTODIN Message Processing System
HAP	Host Access Protocol
HBR	Human Behavioral Representation
HBR	House Budget Resolution
HBTWG	Human Behavior Technology Working Group
HBV	Human Behavioral Variables
HCI	Human Computer Interaction
HCI	Human Computer Interface
HD	Hard Disk
HD	High Density
HDF	Hierarchical Data Format
HDL	Harry Diamond Laboratories
HDLC	High-level Data Link Control Protocol
HDS	High Definition Systems
HDTV	High Definition Television
HDU	Helmet Display Unit
HEFeS	Hierarchical Environmental Feature Structure
HFE	Human Factors Engineering
HFEA	Human Factors Engineering Analysis
HFEA	Human Factors Engineering Assessment
HELIPAC	Helicopter Piloted Air Combat Model
HITL	Human-in-the-Loop
HLA	High-Level Architecture
HMD	Helmet Mounted Display
HMI	Human-Machine Interface
HMS	Helmet Mounted Sight
HMS/DS	Helmet Mounted Sight/Display System
HMU	Helmet Mounted Unit
HNSC	House National Security Committee
HOL	High Order Language
HOM	Higher Order Model
HOTMAC	High Order Turbulence Model for Atmospheric Circulations
HPC	High Performance Computer
HPCC	High Performance Computing and Communications
HPCCIT	High Performance Computing, Communications, and Information Technology
HPMWAM	High Power Microwave Weapon Assessment Model
HPPI	High Performance Parallel Interface

HQDA	Headquarters, Department of the Army
HQMC	Headquarters Marine Corps
HRCP	High Resolution Cloud Prognosis Model
HRIS	Human Resource Information System
HS	High Speed
HSDC	High Speed Digital Chart
HSI	Human Systems Integration
HSI	High Speed Serial Interface
HTA	Hohlenfels (Germany) Training Area
HTML	Hyper Text Mark-Up Language
HTTP	Hyper Text Transfer Protocol
HUMINT	Human Intelligence
HW/SWIL	Hardware/Software-In-The-Loop
HWIL	Hardware-in-the-Loop
HYTIME	Hypermedia/Time-Based Structuring Language

I

I&M	Improvement and Modernization
I/O	Input/Output
I-TES	I-Band Threat Environment Simulator
I3	Intelligent Integration of Information
IAC	Information Analysis Center
IADS	Integrated Air Defense System
IC	Image Computer
IC	Integrated Circuit
ICA	Integrated Communications Architecture
ICASE	Integrated Computer Aided Software Engineering
ICATT	Intelligent Computer Assisted Training Testbed
ICC	Integrated Control Center
ICCOG	Intelligence Community Coordination Group
ICD	Interface Control Document
ICDB	Integrated Communications Database
ICMP	Internet Control Message Protocol
ICOM	Input, Control, Output, and Mechanism
IDA	Institute for Defense Analyses
IDB	Integrated Database
IDBEF	Integrated Database Extract Format
IDBTF	Integrated Database Transaction Format
I/DBTWG	Information/Database Technology Working Group
IDEA	Integrated Design/Engineering Aide
IDEEAS	Interactive Distributed Early Entry Analysis Simulation
IDEF1X	Integration Definition Language for Information Modeling
IDL	Interface Definition Language
IDL	Interface Design Language
IDM	Improved Data Modem
IDP	Initial Domain Part
IDRL	Integrated data requirements list
IEEE	Institute of Electrical and Electronic Engineers
IEWTPT	Intelligence and Electronic Warfare Tactical Proficiency Trainer
IFIP	International Federation of Information Processing
IFM	Ionospheric Forecast Model
IFOR	Intelligent Forces
IGES	Initial Graphics Exchange Standard
IGOSS	Industry/Government Open System Specification
IHADSS	Integrated Helmet and Display Sight System

IIS	Intelligence Information System
IITRI	Illinois Institute of Technology Research Institute
IITSC	Industry/Intergovernment Training and Simulation Conference
I/ITSEC	Interservice Industry Training Systems and Education Conference
IM	Information Management
IMA	Information Mission Area
IMB	Interoperability Management Board
IMD	Information Management Directorate
IMIT	Interoperability Management Information Tool
IMP	Information Management Plan
IMR	Information Management Representative
IMS	Information Management System
IMTEC	GAO's Information Management and Technology Division
INCA	Intelligence Communications Architecture
INCOMMS	Individual Combatant Modeling and Simulation
INFOSEC	Information Security
INMS	Integrated Network Management System
INST	Information Standards and Technology Standardization Area
INX	Information Exchange
IODA	Information Oriented Decision Architecture
IP	Internet Protocol
IP	Information Processor
IP	Image Processor
IPC	Information Policy Council
IPM	Interpersonal Messaging
IPMS	Interpersonal Messaging System
IPPD	Integrated Product and Process Development
IPPM	Integrated Product Process Model
IOC	Initial Operational Capability
IPR	In-process review
IPT	Integrated Product Team
IRAC	International Requirements and Design Criteria
IR&D	Independent Research and Development
IRDS	Information Resource Dictionary System
IREM	Integrated Research, Evaluation, and System Analysis Model
IRIAC	Infrared Information Analysis Center
IRIAM	Integrated Radar and Infrared Analysis and Modeling
IRIG	Inter-Range Instrumentation Group
IRIS	Internetted Range Interactive Simulations
IRM	Information Resource Management
IS	Information System
IS	International Standardization

IS	Interface Specification
IS	Israel/Israeli
ISA	Information System Architecture
ISA	Industry Standard Architecture
ISATS	Information System ADP Tracking System
ISC	U.S. Army Information Systems Command
ISDN	Integrated Services Digital Network
ISEE	Integrated Software Engineering Environment
ISEM	Integrated Space Environmental Model
ISG	Industry Steering Group
ISGMS	Industry Steering Group on Modeling and Simulation
ISLE	Integrated Simulation Language Environment
ISM	Industrial, Scientific, and Medical
ISMC	Imagery Standards Management Committee
ISO	International Standardization Organization
ISSAA	Information Systems Selection and Acquisition Agency
ISSC	Information Systems Software Center
ISSM	Information Systems Security Manager
ISSO	Information System Security Officer
ISSPM	Information Systems Security Program
IST	Institute for Simulation and Training
IT	Information Technology
ITAM	Interdiction Tanker Analysis Model
ITD	Interim Terrain Database
ITDN	Integrated Tactical Data Network
ITEM	Integrated Theater Engagement Model
ITEMM	Integrated Terrain-Environment-Multipath Model
ITEMS	Interactive Tactical Environment Management System
ITN	Identification Tasking and Networking
ITPB	Information Technology Policy Board
ITRI	Information Technology Reuse Initiative
ITRUS	Information Technology Reuse
ITS	Intelligent Tutoring System
ITSDN	Integrated Tactical/Strategic Data Network
ITSPO	Information Technology Standards Program Office
ITTS	Instrumentation Targets and Threat Simulators
ITU	Information Transport Utility
ITV	Interactive Television
ITVGS	Interactive Television Generic Server
IUSS	Integrated Unit Simulation System
IV&V	Independent Verification and Validation
IVEPSS	Immersive Virtual Environment Prototyping Simulation System

IVIS	Inter-Vehicular Information System
IWG	Interface Working Group
IWSDB	Integrated Weapon Systems Data Base
IWSS	Interactive Weapon System Simulation

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J

J-SPACES	Joint Space Combat Environment Simulation
JAAT	Joint Air Attack Team
JACG	Joint Aeronautical Commanders Group
JACTS	Joint Aircrew Combat Training System
JADS	Joint Advanced Distributed Simulation
JADS/JFS	Joint Advanced Distributed Simulation Joint Feasibility Study
JAFLME	Joint Automated Field Logistics Model for Employment
JAMC	Joint Amphibious Mine Countermeasure
JAMIP	Joint Analytic Model Improvement Program
JAMP	Joint Analytic Model Program
JANNAF	Joint Army, Navy, NASA, Air Force
JANUS	A series of land combat models with some limited air and naval operations. Primarily sponsored by Lawrence Livermore National Laboratory and TRADOC
JASP	Joint Advanced Strike Technology Program
JAST	Joint Advanced Strike Technology Program
JAWS	Joint Analytic Warfare Systems
JCALS	Joint Computer-Aided Acquisition Logistics System
JCCD	Joint Camouflage, Concealment and Deception
JCG	Joint Commanders Group
JCG(T&E)	Joint Commanders Group (Test and Evaluation)
JCM	Joint Conflict Model
JCMO	Joint CALS Management Organization
JCOS	Joint Countermine Operational Simulation
JCS	Joint Chiefs of Staff
JDBE	Joint Data Base Elements
JDC	Joint Doctrine Center
JDL	Joint Director of Laboratories
JECEWSI	Joint Electronic Command Electronic Warfare Simulation Interface
JEL	Joint Electronic Library
JESS	Joint Exercise Simulation System
JETTA	Joint Environment for Testing, Training, and Analysis
JEWC	Joint Electronic Warfare Center
JFACC	Joint Force Air Component Commander
JFAST	Joint Flow and Analysis System for Transportation
JHU/APL	John Hopkins University/Applied Physics Lab
JHU	John Hopkins University
JIC	Joint Intelligence Center
JIEO	Joint Interoperability and Engineering Organization
JIMASS	Joint Intelligence Modeling and Simulation System

JINTACCS	Joint Interoperability of Tactical Command and Control System
JLC	Joint Logistics Commanders
JLINK	Janus Linked to Battlefield Distributed Simulation - Developmental
JMASS	Joint Modeling and Simulation System
JMCIS	Joint Maritime Command Information System
JMSEP	Joint Modeling and Simulation Executive Panel
JMSWG	Joint Multi-TADIL Standards Working Group
JOPES	Joint Operation Planning and Execution System
JOTS-VIDS	Joint Operations and Tactical System - Visually Integrated Data System
JPATS	Joint Primary Aircraft Training System
JPL	Jet Propulsion Laboratory
JPO	Joint Program Office
JPSD	Joint Precision Strike Demonstration
JRMB	Joint Requirements And Management Board
JROC	Joint Requirements Oversight Council
JRTC	Joint Readiness Training Center
JSAN	Joint Staff Automation of the Nineties
JSEM	Joint Service Endgame Model
JSIMS	Joint Simulation System
JSIP	Joint Services Imagery Processing System
JSOR	Joint Service Operational Requirement
JSOW	Joint Stand-Off Weapon
JSP	Joint Service Program
JSRB	Joint Software Review Board
JSSA	Joint Stealth Strike AIrcraft
JSTARS	Joint Surveillance & Target Attack Radar System
JSTASL	Joint Scenario Tool Architecture and Script Language
JSTE	Joint System Training Exercise
JTAGS	Joint Tactical Ground Station
JTAMS	Joint Tactical Missile Signatures
JTASC	Joint Training, Analysis and Simulation Center
JTC	Joint Technical Committee
JTC	Joint Training Confederation
JTC3A	Joint Tactical Command, Control and Communications Agency
JTCTS	Joint Tactical Combat Training System
JT&E	Joint Test and Evaluation
JTFS	Joint Task Force Simulation
JTIDS	Joint Tactical Information Distribution System

JTLS	Joint Theater Level Simulator
JTMP	Joint Training Master Plan
JTS	Joint Tactical Simulation
JTSSG	Joint Telecommunications Standards Steering Group
JTWSG	Joint Theater of War Scenario Generator
JUDI	Joint Universal Data Interpreter
JULLS	Joint Universal Lessons Learned System
JUSTIS	Joint Uniform Services Technical Information System
JVIDS	Joint Visually Integrated Display System
JWARS	Joint Warfare Simulation
JWFC	Joint Warfighting Center
JWICS	Joint Worldwide Intelligence Communications System
JWID	Joint Warrior Interoperability Demonstration
JWSOL	Joint Warfare Simulation Object Library

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K

KA	Knowledge Acquisition (from data)
KAPSE	Kernel ADA programming environment
KBE	Knowledge Based Extraction
KBLPS	Knowledge Based Logistics Planning Shell
kbps	Kilobits per second
KBS	Knowledge Based System
KBSC	Korean Battle Simulation Center
KDEC	Kinetic Energy Weapons Digital Emulation Center
KDR	Kill/Detection Ratio
KHILS	Kinetic Kill Vehicle HITL Simulator
kHz	Kilorhertz
KI	Knowledge Integration
KIPPL	Key Intelligence Programs Priority List
KNACK	Knowledge Acquisition Kernel
KOPS	Thousands of Operations Per Second
KRS	Knowledge Retrieval System
KSS	Knowledge Support System
KWIC	Key Word in Context
KWOC	Key Word out of Context

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L

LABCOM	U.S. Army Laboratory Command
LAM	Louisiana Maneuvers
LAN	Local Area Network
LANACS	Local Area Network Asynchronous Connection Server
LANL	Los Alamos National Laboratory
LAPM	Link Access Procedure for Modems
LAT	Local Access Terminal
LATS	Low Altitude Threat Simulator
LAWN	Local Area Wireless Network
LBJS	Littoral Battlespace Joint Service
LB/TS	Large Blast/Thermal Simulator
LCC	Life Cycle Cost
LCCE	Life Cycle Cost Estimate
LCD	Liquid Crystal Display
LCM	Life Cycle Model
LCM	Life Cycle Management
LCSEC	Life Cycle Software Engineering Center
LCSS	Life Cycle Software Support
LCSSA	Life Cycle Software Support Activity
LCSSE	Life Cycle Software Support Environment
LCU	Laptop Computer Unit
LCU	Lightweight Computer Unit
LCU	Last Cluster Used
LDM	Long Distance Modem
LDR	Low-Data-Rate
LEAF	Law Enforcement Access Field
LEC	Local Exchange Carrier
LED	Light-Emitting Diode
LEE	Leading Edge Environment
LEEGCCS	Leading Edge Environment for the Global Command and Control System
LEM	Language Extension Module
LFU	Least Frequently Used
LHN	Long-Haul Network
LIVID	Language Identification and Voice Identification
LLNL	Lawrence-Livermore National Laboratory
LNE	Local Network Element
LOC	Lines of Code
LOCIS	Library of Congress Information System
LOD	Levels of Detail
LOE	Level of Effort
LoF	Loss Of Function
LoF (P)	Loss of Function for Personnel
LOGAIS	Logistics Automated Information System

LPM	Lines Per Minute
LRI	Line Replacement Item
LRIP	Low-Rate Initial Production
LRM	Language Reference Manual
LRM	Line Replaceable Unit
LRN	Local Range Network
LRU	Line Replaceable Unit
LSB	Least Significant Bit
LSC	Least Significant Character
LSE	Local Subscriber Environment
LSTF	Life Sciences Test Facility
LWTB	Land Warrior Testbed
LWTC	Littoral Warfare Training Center

M/TGBC3I	Mobile/Transportable Ground-Based C3I (system)
M/S	Milestone
M&S	Modeling and Simulation
MS&A	Modeling, Simulation and Analysis
MACH	Model of Atmospheric Chemical Hazards
MACIPS	Military Airlift Command Information Processing System
MACOM	Major Army command
MACS	Mutually Agreeable Commercial Software
MAD	Message Address Directory
MAGTF	Marine Air/Ground Task Force
MAHCA	Multiple Agent Hybrid Control Architecture
MAIS	Mobile Automated Instrumentation Suite
MAISRC	Major Automated Information System Review Council
MAMS	Military Airspace Management System
MAN	Metropolitan Area Network
MAPSE	Minimal ADA Program Support Environment
MARCORSYSCOM	Marine Corps Systems Command
MARKS	Modern Army Record Keeping System
MARS	Multi-Warfare Assessment and Research System
MASC	U.S. Air Force Modeling Analysis and Simulation Center
MASDA	Model and Simulation Decision Aid
MASE	Message Administration Service Element
MBE	Multi-Band Emitter
MBO	Management By Objectives
Mbps	Megabits per second
MCAD	Mechanical Computer Aided Design
MCB	Memory Control Block
MCBF	Mean Cycles Between Failures
MCCDC	Marine Corps Combat Development Command
MCCR	Mission Critical Computer Resources
MCDA	Multi-Criteria Decision Analysis
MCE	Mission Control Element
MCEB	Military Communications-Electronic Board
MCGA	Multicast Group Agent
MCMSMO	Marine Corps Modeling and Simulation Management Office
MCMSWG	Marine Corps Modeling and Simulation Working Group
MCS	Message Conversion System
MCTL	Militarily Critical Technology List
MCTSSA	Marine Corps Tactical Systems Support Activity
M2DBMS	Multi-Model, Multi-Lingual Data Base Management System

MDDC	Missile Defense Data Center
MDR	Medium-Data-Rate
MDS	Meteorological Data System
MDSE	Message Delivery Service Element
MDT	Message Distribution Terminal
MDT2	Multi-Service Distributed Training Testbed
MEL	Master Environment Library
MEL	Master Events List
METL	Mission Essential Task List
METS	Mobile Electronic Threat Simulator
METT-T	Mission, Enemy, Troops, Terrain, and Time
MFG	Multi-Function Gateway
MFIP	Multi-Function Interoperability Processor
MFS	Manned Flight Simulator
MGED	Multidevice Graphics Editor
MGRS	Military Grid Reference System
MHS	Message Handling System
MHz	MegaHertz
MIB	Management Information Base
MICRO-SAINT	Task network simulation language
MIDAS	Model for Intertheater Deployment by Air and Sea
MIDS	Multifunction Information Distribution System
MIDS-LVT	Multi-Functional Information Distribution System - Low Voltage Terminal
MIL	Man-in-the-loop
MILES	Multiple Integrated Laser Engagement System
MILNET	Military network
MIMD	Multiple Input, Multiple Data
MIMD	Multiple-Instruction, Multiple-Data
MIME	Multipurpose Internet Mail Extension
MINX	Multimedia Information Exchange Network
MIPR	Military Interdepartmental Purchase Request
MIPR	Military Interagency Procurement Requisition
MIPS	Millions of Instructions Per Second
MIS	Management Information System
MISD	Management Information Systems Directorate
MISMA	Model Improvement and Study Management Agency
MISSI	Multi-level Information System Security Initiative
MIT	Massachusetts Institute of Technology
MIT	Management Information Tree
MITL	Man-In-The-Loop
ML	Machine Language
MLS	Multi-Level Security
MMHS	Military Message Handling System

MMI	Man-Machine Interface
MMS	Multilevel Mail Server
MMU	Mass Memory Unit
MMU	Memory Management Unit
MMW	Millimeter Wave
MMWPROP	Millimeter Wave Propagation Prediction Model
MNOI	Messages Not Of Interest
MNS	Mission Need Statement
MOBA	Military Operations in Built-Up Areas
MOBACS	Military Operations in Built-Up Areas Combat Simulation
MOBSAM	Mobilization Station Assessment Model
MODAS	Modular Ocean Data Assimilation System
ModSAF	Modular Semi-Automated Forces
MOE	Measures of Effectiveness
MOHLL	Machine Oriented High Level Language
MOO	Measures of Outcome
MOP	Measures Of Performance
MOPP	Mission Oriented Protective Posture
MORIMOC	More Operational Realism in Modeling of Combat
MORS	Military Operations Research Society
MOSAIC	MOdels and Simulations: Army Integrated Catalog
MOSART	Moderate Spectral Atmospheric Radiance and Transmittance Code
MOUT	Military Operations in Urban Terrain
MPC	Micro Portable Computer
MPD	Message Preparation Directory
MPDU	Message Protocol Data Unit
MPF	Maritime Prepositioned Force
MRC	Major Regional Conflict
MRM	Medical Regulating Model
MRSE	Message Retrieval Service Element
MRT	Mean Repair Time
MRTFB	Major Range and Test Facility Base
MS	Milestone
MS	Message Store
MSAS	Military Simulation Assessment System
MSCC	Modeling and Simulation Coordination Center
MSCCTF	Modeling and Simulation Coordination Center Task Force
MSD	Mass Storage Device
MSDDB	Master Seafloor Digital Data Base
MSDOS	Microsoft Disk Operating System
MSDS	Mission Scenario Data System
MSDS	Master Simulation Data System
MSE	Multiple Simulation Exercise
MSE	Mobile Subscriber Equipment

MSEA	Modeling and Simulation Executive Agent
MSI	Multi-Spectral Imagery
MSIC-CLUTTER	Missile-Space and Intelligence Center-CLUTTER Model
MSIP	Modeling and Simulation Investment Plan
MSIS	M&S Information System
MSL	Mean Sea Level
MSMP	M&S Master Plan
MSOSA	M&S Operational Support Activity
MSP	Message Security Protocol
MSR	Missile Simulation Round
MSRR	M&S Resource Repository
MSS	Millimeter Simulation System
MSSE	Message Submission Service Element
MSWG	Modeling and Simulation Working Group
MT	Message Transfer
MTA	Message Transfer Agent
MTBCF	Mean Time Between Critical Failures
MTBF	Mean Time Between Failures
MTBR	Mean Time Between Repairs
MTDS	Marine Corps Tactical Data System
MTF	Message Text Format
MTF	Message Transfer Format
MTF	Modulation Transfer Function;
MTM	Model-Test-Model
MTOPS	Millions of Theoretical Operations Per Second
MTS	Moving Target Simulator
MTS	Message Transfer System
MTTF	Mean Time To Failure
MTTR	Mean Time To Repair
MTWS	Marine Air-Ground Task Force Tactical Warfare Simulation
MUTES	Multiple Threat Emitter Systems
MWARS	Maneuver-Warfare Analytical and Research System
MWTB	Mounted Warfare Testbed

NALCOMIS	Naval Aviation Logistics Command Information System
NAM	Network Assessment Model
NARDAC	Navy Regional Data Automation Center
NATO	North Atlantic Treaty Organization
NAS	National Academy of Sciences
NASA	National Aeronautics and Space Administration
NASA/MSFC	NASA Marshall Space Flight Center
NASA/Stennis	NASA Stennis Space Center
NASI	NetWare Asynchronous Services Interface
NASM	National Air (Warfare) Simulation Model
NASM	National Air Space (Warfare) Model
NASNET	Naval Aviation Simulator Network Training
NAU	Network Addressable Unit
NAVAIR	Naval Air Systems Command
NAVAIRLANT	Naval Air Force Atlantic Fleet
NAVAIRPAC	Naval Air Force Pacific Fleet
NAVAIRSYSCOM	Naval Air Systems Command
NAVELECSYSCOM	Naval Electronics Systems Command
NAVMIC	Naval Maritime Intelligence Center
NAVSEA	Naval Sea System Command
NAVSEASYSCOM	Naval Sea Systems Command
NBS	National Bureau of Standards (see NIST)
NCA	National Command Authority
NCARAI	Navy Center for Applied Research in Artificial Intelligence
NCC	Network Control Center
NCCOSC	Naval Command, Control and Ocean Surveillance Center
NCDC	National Climatic Data Center
NCS	Network Computing System
NCS	National Communications System
NCS	Network Control Station
NCSA	National Center for Super-computing Applications
NCSC	National Computer Security Center
NCSL	National Computer System Laboratory
NDL	Network Data Language
NERF	Naval Emitter Reference File
NES	Network Encryption System
NESDIS	National Environmental Satellite Data and Information Service
NESSE	Near Earth Simulated Space Environment
NESSE	Near Earth Space Synthetic Environment
NET	Network Entity Title
NET	Not Earlier Then

NET	New Equipment Training
NETT	New Equipment Training Team
NFS	Network File Server
NGCR	Next Generation Computer Resources
NGTCS	Next Generation Target Control System
NIC	Network Information Center
NIDR	Network Information Discover and Retrieval
NII	National Information Infrastructure
NIR	Network Information Retrieval
NISO	National Information Standards Organization
NIST	National Institute of Standards and Technology
NITC	National Information Technology Center
NITES	Naval Integrated Tactical Environmental System
NITF	National Imagery Transmission Format
NLSP	Network Layer Security Protocol
NMS	Network Management System
NOAA	National Oceanic and Atmospheric Administration
NODC	National Oceanographic Data Center
NODDS	Navy Oceanographic Data Distribution System
NOGAPS	Navy Operational Global Atmospheric Prediction System
NORAPS	Naval Operational Regional Atmospheric Predictions System
NOS	Network Operationg System
NOVAM	Navy Oceanic Vertical Aerosol Model
NRaD	Naval Command, Control and Ocean Surveillance Center, Research, Development, Test, and Evaluation Division
NREN	National Research and Education Network
NRL	Naval Research Laboratory
NRMC	Navy Regional Medical Center
NRMM	NATO Reference Mobility Model
NRMS	Near Term Mine Reconnaissance System
NSA	National Security Agency
NSC	National Simulation Center
NSD	National Security Directive
NSDI	National Spatial Data Infrastructure
NSF	National Science Foundation
NSIA	National Security Industrial Association
NSIDC	National Snow and Ice Data Center
NSO	Network Security Officer
NSRD	National Software Reuse Directory
NSS	Naval Simulation System
NSTC	National Science and Technology Council

NSTL	National Software Testing Labs
NTACMS	Navy Tactical Missile System
NTB	National Test Bed
NTC	National Training Center
NTC-IS	National Training Center INstrumentation System
NTCS-A	Navy Tactical Command Systems Afloat
NTDS	Navy Tactical Data System
NTF	National Test Facility
NTIC	Naval Technical Intelligence Center
NTIS	National Technical Information Service
NTU	New Threat Upgrade
NUI	Network User Interface
NUSSE	Non-Uniform Simple Surface Evaporation (model)
NVD	Night Vision Device
NV&EOL	Night Vision and Electro-Optics Laboratory
NVE	Night Vision Equipment
NVESD	Night Vision and Electronic Sensors Directorate
NVG	Night Vision Goggles
NVRAM	Non-Volatile Random Access Memory
NVS	Night Vision System
NWARS	National Wargaming System
NWP	Numerical Weather Prediction Model
NWTDB	Naval Warfare Technical Data Base

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O

O&M	Operations and Maintenance
OAI	Open Applications Interface
OAML	Oceanographic and Atmospheric Modeling Library
OASD	Office of the Assistant Secretary of Defense
OASIS	Operations Analysis and Simulation Interface System
OATS	Office Automation and Technology Services
OBJ	Object
OCI	Organizational Conflict of Interest
ODES	Operational and Deployment Experiments Simulator
ODI	Open Datalink Interface
ODM	Organizational Domain Modeling
ODP	Open Distributed Processing
OII	Operations-Intelligence Interface
OIRA	OMB Office of Information and Regulatory Affairs
OIS	Office Information System
OLE	Object Linking and Embedding
OMA	Object Management Architecture
OMFTS	Operational Maneuver From the Sea
OMG	Object Management Group
OMO	Other Military Operations
ONC	Open Network Computing
OO	Object-Oriented
OOA	Object-Oriented Analysis
OOD	Object-Oriented Design
OODA	Object-Oriented Design with Assemblies
OODB	Object-Oriented Data Base
OODBMS	Object-Oriented Database Management System
OOM	Object-Oriented Modeling
OOP	Object-Oriented Programming
OOT	Object Oriented Technologies
OOTW	Operations Other Than War
OPFOR	Opposing Forces
OPR	Office of Primary Responsibility
OPTADS	Operations Tactical Data Systems
ORACLE	Operational Research and Critical Link Evaluation
ORB	Object Request Broker
ORD	Operational Requirements Document
ORSMC	Off-Route Smart mine Clearance
OS	Operating System
OSD	Office of the Secretary of Defense
OSE	Open System Environment
OSEA	Organization for Synthetic Environment Architecture
OSIRIS	Optimized Synthetic Infra-Red Interactive Simulation

OSP	Other Service Program
OSRM	Open System Reference Model
OSS	Operations Support System
OSTP	Office of Science and Technology Policy
OTA	Office of Technology Assessment
OTAU	Over The Air Updating
OTDR	Optical Time Domain Reflector
OTI	Office of Technical Integration
OUSD(A&T)	Office of the Under Secretary of Defense for Acquisition and Technology

P

P&L	Production and Logistics
P3I	Pre-Planned Product Improvement
PADIL	PATRIOT Air Defense Information Language
PADS	Position Azimuth Determining System
PAL	Public Ada Library
PAMS	Predictive Aircraft Maintenance
PAT	Process Action Team
PC	Personal computer
PCB	Printed circuit board
PCE	Process-Centered Environment
PCIS	Portable Common Interface Set
PCM	Pulse Coded Modulation
PCM	Production Cost Model
PCMCIA	Personal Computer Memory Card International Association
PCMT	Personal Computer Message Terminal
PCTE	Portable Common Tools Environment
PDES	Product Data Exchange using STEP
PDL	Programmable Design Language
PDSS	Post Deployment Software Support
PDU	Protocol Data Unit
PEGASUS	Perspective View Generator and Analysis Systems for Unmanned Sensors
PHIGS	Programmer’s Hierarchical Interactive Graphics Standard
PID	Protocol Identifier Data
PIF	Picture Interchange Format File
PIF	Program Interrupt Controller
PIN	Personal Identification Number
PIN	Process Identification Number
PIO	Processor Input/Output
PIPS	Polar Ice Prediction System
PLA	Plain Language Address
PLAD	Plain Language Address Designator
PLEXUS	Phillips Laboratory Expert User System
PM	Program Manager
PM ITTS	Project Manager for Instrumentation, Targets, and Threat Simulations
PMSP	Preliminary Message Security Protocol
PNP	Plug and Play
POM	Program Objectives Memorandum
POP-Ds	Proof-of-Principle Demonstrations
POPS	Pyrotechnic Optical Plume Simulator
POSIX	Portable Operating System Interface

PPDB	Point Positioning Data Base
PPP	Point-to-Point Protocol
PRF	Pulse Repetition Frequency
PRETT	PATRIOT Radar Emulator Test Tool
PRIMES	Pre-flight Integration of Munitions and Electronic Systems
PRISM	Parameterized Real-Time Ionospheric Specification Model
PROM	Programmable Read-Only Memory
PSA	Principal Staff Assistant
PSDB	Perceived Situation Database
PTADB	Planning Terrain Analysis Data Base
PTOS	Patriot Tactical Operations Simulation
PVC	Permanent Virtual Circuit
PVD	Plain View Display

Q

Q/I	Question/Issue
QA	Quality Assurance
QAE	Quality Assurance Evaluator
QBE	Query By Example
QBF	Query By Form
QC	Quality Control
QDE	Quality Data Evaluation
QDOS	Quick and Dirty Operating System
QDR	Quality Deficiency Report
QFA	Quick File Access
QJM	Quantified Judgement Model
QoS	Quality of Service

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R-T	Real-Time
R&A	Review and Analysis
R&D	Research and Development
RAC	Reliability Analysis Center
RADIUS	Research and Development for Image Understanding Systems
RAM	Random Access Memory
RAM	Reliability, Availability, and Maintainability
RAPIDSIM	Rapid Intertheater Deployment Simulator
RASPUTIN	Rapid Scenario Preparation Unit for Intelligence
RASS	Random Access Storage System
RASSP	Rapid Prototyping of Application Specific Signal Processors
RAV	Robotic Air Vehicle
RBBS	Remote Bulletin Board System
RCAS	Reserve Component Automation System
RC	Routing Control
RCC	Range Commanders Council
RCS	Radar Cross Section
RCV	Remotely Controlled Vehicle
RDA	Remote Database Access
RDA	Research, Development, and Acquisition
RDADS	Real Time Data Acquisition And Display System
RDAISA	Research, Development and Acquisition Information Systems Agency
RDB	Relational Database
RDBMS	Relational Data Base Management System
RDMS	Relational Data Management System
RDMS	Range Data Management System
RDT	Remote Debriefing Tool
RDT&E	Research, Development, Test and Evaluation
REA	Remote Entity Approximation
REDCAP	Real-Time Electronic Digitally Controlled Analyzer Processor
REFORGER	Return of Forces to Germany
RESA	Research, Evaluation, and System Analysis Model
RESS	Radar Environment Simulator System
RF	Radio Frequency
RFI	Request for Information
RFP	Request for Proposals
RFPI	Rapid Force Projection Initiative
RFS	Remote File Sharing
RFSS	Radio Frequency Simulation System
RG	Remote Gateway

RIMS	Radar Image Modeling System
RIP	Routing Information Protocol
RISC	Reduced Instruction Set Computer
RISM	Reduced Instruction Set Model
RITN	Real-Time Information Transfer and Networking
RLF	Reuse Library Framework
RLMS	Radar Land Mass Simulator
RMA	Revolution in Military Affairs
ROAMS	Reusable Object Access and Management System
ROI	Return on Investment
ROM	Read Only Memory
ROM	Rough Order of Magnitude
ROMC	Required Operational Messaging Characteristics
ROSE	Remote Operation Service Element
ROV	Range of View
ROV	Remotely Operated Vehicle
ROW	Rest of the World
RPC	Remote Procedure Call
RRDB	Rapidly Reconfigurable Data Base
RRDS	Reduced Resolution Data Set
RS	Relay System
RSFCT	Road Simulator for Fire Control Testing
RSIS	Rotorcraft Systems Integrated Simulator
RSS	Remote Satellite Simulation
RTAD	Relocatable Targets Analysis Data
RTCA	Real-Time Casualty Assessment
RTCNS	Real-Time Communications Network Simulator
RTCS	Real Time Clock System
RTF	Rich Text Format
RTI	Runtime Infrastructure
RTIC	real-time information in the cockpit
RTOS	Reconfigurable Tactical Operations Simulator
RTOS	Real Time Operating System
RTV	Real Time Video
RWM	Relocatable Window Model
RWM	Read-Write Memory

S/W	Software
S&E	Science and Engineering
S&M	Simulation and Modeling
S&T	Science and Technology
S&TP	Science and Technology Program
SA	Studies and Analysis
SA	Situational Awareness
SAAE	Software Architecture Attribute Engineering
SAC	Senate Appropriations Committee
SAC	Senior Advisory Council
SADS	Simulated Air Defense System
SAF	Semi-Automated Forces
SAFOR	Semi-Automated Forces
SALT	Society for Applied Learning Technology
SAMSON	Simulation and Modeling Supporting Operational Needs
SAS	Statistical Analysis Software
SASC	Senate Armed Services Committee
SASER	Synthetic Atmosphere and Space Environment Representations
SATCOM	Satellite Communications
SAWE-RF	Simulating Aerial Weapon Effect - Radio Frequency
SBB	Synthetic Battle Bridge
SBD	Simulation Based Design
SBDS	Simulation Based Design System
SBIS	Sustaining Base Information System
SB ITS	Simulation Based Intelligent Tutoring System
SBLC	Sustaining Base Level Computer
SBS	Seamless Battlefield Simulator
SCCB	Software Configuration Control Board
SCDL	Surveillance and Control Data Link
SCIPMIS	Standard Civilian Personnel Management Information System
SCORES	Scenario Oriented Recurring Evaluation System
SCM	Software Configuration Management
SDA	Software Design Activity
SDD	System Design Document
SDF	Software Development File
SDL	Software Development Library
SDL	Sensor Data Link
SDLC	Synchronous Data Link Control (IBM)
SDM	Sub-Rate Data Multiplexer
SDNS	Secure Data Network System
SDP	Software Development Plan

SDRB	Specifications and Data Review Board
SDSA	Software Development and Support Activity
SDSF	Software Development and Support Facility
SE	Synthetic Environment
SEACATT	Sea Combined Arms Tactical Trainer
SEAROADS	Simulation, Evaluation, Analysis and Research on Air Defense Systems
SECDEF	Secretary of Defense
SECOMO	Software Engineering Cost Model
SED	Software Engineering Directorate
SEDRIS	Synthetic Environment Data Representation and Interchange Specification
SEE	Software Engineering Environments
SEES	Security Exercise Evaluation System
SEI	Software Engineering Institute
SEM	Spherical Earth Model
SEM	Simulation, Engineering and Modeling
SEM	System Engineering and Modeling
SESG	Software Engineering Support Group
SF	Synthetic Forces
SFTS	Synthetic Flight Training Systems
SGD	Symbolized Graphics Data
SGEN	Signal Generator
SGML	Standard Generalized Markup Language
SID	Stochastic Indexing
SIDS	Standard Interoperable Datalink System
SIF	Standard Interchange Format
SIF	System Integration Facilities
SIFT	Simulation Interface Toolset
SIG	Special Interest Group
SIGINT	Signals Intelligence
SIL	System Integration Laboratories
Sim/Stim	Simulation/Stimulation
SiMan	Simulation Management
SIM	Sensor Interaction Model
SIMD	Single Instruction Multiple Data
SIMITAR	Simulation in
SIMNET	Simulation Network
SIMTECH	Simulation Technology Program
SIMWG	Simulation Working Group
SIRAS	Simulation, Instrumentation, Reduction, and Analysis System
SLAVE	Simple Lethality and Vulnerability Simulator
SLF	Scalability Logger Format

SLIP	Serial Line Internet Protocol
SLOD	Simulator Level of Detail
SMART	Simulation and Modeling Anchored in Real-World Testing
SMART	Susceptibility Model Assessment and Range Test
SMDS	Switched Multi-megabit Data Service
SME	Subject Matter Expert
SMF	System Management Function
SMI	Soldier/Machine Interface
SMSE	Super Multiple Simulation Exercise
SMSP	Soil Moisture Strength Prediction Model
SMTA	Subordinate Message Transfer Agent
SMTP	Simple Message Transfer Protocol
SMTP	Simple Mail Transfer Protocol
SNA	System Network Architecture
SNAP	Simulator Network Analysis Project
SND	Standardized Nomenclature Database
SNL	Sandia National Laboratories
SNMP	Simple Network Management Protocol
SNNAP	Statistical Neural Network Analysis Package
SNODEP	Snow Depth Model
SNP	Sub-Network Protocol
SNR	Signal to Noise Ratio
SNS	Secure Network Server
SOACMS	Special Operations Aviation Combat Mission Simulators
Soar	State Operator And Result
SOE	Synthetic Operating Environment
SOE	Standard Operating Environment
SOFATS	Special Operations Forces Aircrew Training System
SOFNET-JCM	Special Operations Forces Inter-Simulation Network - Joint Conflict Model
SOFPARS	Special Operations Forces Planning and Rehearsal System
SOL	Simulation Oriented Language
SONET	Synchronous Optical Network
SOTA	State of the Art
SOW	Statement of Work
SPACECOM	Space Command
SPAWAR	Space and Naval Warfare Systems Command
SPCR	Software Problem Change Requests
SPD	Standards Planning Database
SPPD	Signal ProcessOr Package Design
SPRAE	Stochastic Predictor of Artillery Effectiveness
SPS	Software Product Specification
SQA	Software Quality Assurance
SQEP	Software Quality Evaluation Plan

SQL	Structured Query Language
SQL/DS	Structured Query Language/Data System
SQP	Software Quality Program
SQPP	Software Quality Program Plan
SQuASH	Stochastic Quantitative Analysis of System Hierarchies (Computer model for predicting terminal ballistic effects)
SRP	Software Reuse Program
SRR	System or Software Readiness Review
SRS	System or Software Requirements Specification
SRT	Slower Than Real Time
SSA	Software Support Activity
SSCDB	Subsurface Currents Data Base
SSDB	Standard Simulator Data Base
SSE	Simulation Support Environment
SSE	Single Simulation Exercise
SSF	Software Support Function
SSF	Software Support Facility
SSG	Synthetic Signature Generator
SSGM	Synthetic Scene Generation Model
SSMC	Symbology Standards Management Committee
SSP	Simulation Support Plan
SSR	Software Specification Review
SSSE	Small Single Simulation Exercise
SSTORM	Structured Scenario Torpedo Operational Requirements Model
SS&T	Space, Science and Technology
STAARS	Sustainment Training for Army Aviation Readiness Through Simulation
STACCS	Standardized Theater Army Command and Control System
STADLS	Surrogate Threat Air Defense Laser System
STAF	Simulation/Test Acceptance Facility
STAGE	Scenario Toolkit and Generation Environment
STARS	Software Technology for Adaptable Reliable Software
STARS	SHAPE Technical Center Adaptable Radar Simulator
STARS	Software Technology for Adaptable, Reliable Systems
STATBIC	Statistical Texturing Applied to Battlefield Induced Contaminants
STDL	Submarine Tactical Data Link Program
STE	Surface Threat Emitter Or Special Test Equipment
STEP	Standard for the Exchange of Product Model Data
STM	Synchronous Transfer Mode
STOW	Synthetic Theater of War

STOW-E	Synthetic Theater of War - Europe
STP	Software Test Plan
STR	Software Trouble Reports
STRICOM	Simulation, Training and Instrumentation Command
STVLS	Surrogate Threat Visible Laser System
SUAWACS	Soviet Airborne Warning and Control System
SUE	System Unique Equipment
SUMM	Semantic Unification Meta-Model
SURVIAC	Survivability/Vulnerability Information Analysis Center
SUT	System Under Test
SWA	Southwest Asia
SWCI	Software Configuration Item
SWEG	Simulated Warfare Environment Generator
SWIL	Software-in-the-Loop
SWIP	Software Improvement Program
SWOE	Smart Weapon Operability Enhancement
SYNB	Synthetic Battlefield
SYNC	Synchronous
SYSGEN	System Generator
SYSLOG	System Log

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T&E	Test and Evaluation
T&S	Training and Simulation
TA	Technical Architecture
TAA	Technology Area Assessment
TACCIMS	Theater Automated Command Control Information Management System
TACCSF	Theater Air Command and Control Simulation Facility
TACSIM	Tactical Simulation
TACTICS	Tri-Service Advanced Countermeasures and Threats Integrated Combat Simulation
TACTS	Tactical Aircrew Combat Training System
TADIL	Tactical Digital Information Link
TADSS	Training Aids, Devices, Simulators, and Simulations
TAFIM	Technical Architecture Framework for Information Management
TAG	Technical Advisory Group
TAGS	Tactical Gamma Ray Simulator
TAIS	Telecommunications and Automated Information Systems
TAM	:Theater Analysis Model
TAMD	Theater Air and Missile Defense
TAMMIS	Theater Army Medical Management Information System
TAP	Technology Area Plan
TAR	Technology Area Review
TARGET	Theater Analysis and Replanning Graphical Execution Toolkit
TAT	TACSIM (Tactical Simulation) ALSP (Aggregate Level Simulation Protocol) Translator
TBD	To Be Determined
TBIS	Technology Base Investment Strategy
TCC	Telecommunications center
TCG	Time Code Generator
TCIM	Tactical Communications Interface Module
TCIS	Tactical Communications Interface Software
TCP/IP	Transmission Control Protocol/Internet Protocol
TCSEC	Trusted Computer System Evaluation Criteria
TCT	Time-Critical Targets
TCU	Transportable Computer Unit
TD/CM	Technical Data/Configuration Management
TD/CMS	Technical Data/Configuration Management System
TDDS	Tactical Data Distribution System
TDI	Trusted Database Interpretation
TDL	Tactical Data Link
TDM	Time-Division Multiplexer

TDP	TSPI Data Processor
TDP	Test Design Plan
TDP	Technical Data Package
TDSS	Training Devices, Simulations, and Simulators
TEAM	Threat Engagement Analysis Model
TEC	Topographic Engineering Center
TEGEN	Tactical Environment Generator
TEM	Terrain Effects Model
TEMITS	Test and Evaluation Management Information and Tracking System
TEMO	Training, Exercises, and Military Operations
TEMPEST	Security class involving compromise of classified data through interception of electronic impulses.
TEMS	Test and Evaluation Mission Simulator
TENA	Test and Evaluation Network Architecture
TERIS	Test and Evaluation Range Internet System
TERSIM	Terrain Simulation
TES	Tactical Engagement Simulation
TESS	Tactical Engagement Simulation System
TF	Task Force
TFA	Transparent File Access
TFDD	Text File Device Driver
TFG	Terrain and Feature Generation
TFT	Time Flexible Training
TIBS	Tactical Information Broadcast System
TID	Touch Interactive Display
TIDS	Tactical Information Distribution System
TIDES	Threat Intelligence Data Extraction System
TIES	Terrain Imagery Exploitation System
TIIP	Topographic Imagery Integration Prototype
TIM	Technical Integration Manager
TIREM	Terrain-Integrated Rough-Earth Model
TLD	Top Level Demonstrations
TLSP	Transport Layer Security Protocol
TMDSE	Theater Missile Defense System Exerciser
TMS	Telecommunications Management System
TNI	Trusted Network Interpretation
TOPIT	Touched Objects Positioned in Time
TOPS	Thermodynamic Ocean Prediction System
TOSL	Tactical Ocean Simulation Laboratory
TPFDD	Time-Phased Force and Deployment Data
TPFDL	Time-Phased Force and Deployment Listing
TRAC	TRADOC Analysis Center
TRADOC	U.S. Army Training and Doctrine Command

TREEGEN	Tree Generation Model
TRI-TAC	Tri-Service Tactical Communications
TRM	Technical Reference Model
TRS	Thermal Radiation Simulator
TRS	Training, Readiness & Simulation
TSIG	Trusted Systems Interoperability Group
TSMO	Threat Simulator Management Office
TSPI	Time, Space, and Position Information
TTD	Tactical Terrain Data
TTP	Tactics, Techniques and Procedures
TWG	Technology Working Group
TWG	Technical Working Group
TWSEAS	Tactical Warfare Simulation Evaluation and Analysis System
TWSTIAC	Tactical Warfare Simulation and Technical Information Analysis Center

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UAGC	Upper Air Gridded Climatology Data Base
UCC	Unified Combatant Command
UCCATS	Urban Combat Computer Assisted Training System
UCI	User-Computer Interface
UD	User Domain
UDP	User Datagram Protocol
UFL	Ulchi Focus Lens
UFSP	Underground Facilities Signature Program
UGDF	Uniform Gridded Data Field
UIDL	User Interface Definition Language
UIMS	User Interface Management System
UISRM	User Interface System Reference Model
ULANA	Unified Local Area Network Architecture
ULMS	Unit-Level Message Switch
UMEDS	User-Oriented Minimum Essential Data Sets
UN	United Nations
UNA	Use No Abbreviations
UNMA	Unified Network Management Architecture
URL	Universal Resource Location
USA	United States Army
USACOM	U.S. Atlantic Command
USAES	U.S. Army Engineer School
USAREUR	U.S. Amy, Europe
USAF	United States Air Force
USAFACS	U.S. Army Field Artillery Center and School, Fort Sill, Oklahoma
USAFAS	U.S. Army Field Artillery School
USAFE	United States Air Force Europe
USAF/XOM	U.S. Air Force Directorate of Modeling, Simulation and Analysis
USAHEL	U.S. Army Human Engineering Laboratory
USAIS	U.S. Army Infantry School
USAISC	U.S. Army Information System Command
USASSDC	US Army Space and Strategic Defense Command
USCENTCOM	U.S. Central Command
USCG	U.S. Coast Guard
USCINCPAC	U. S. Commander-in-Chief Pacific
USD(A&T)	Under Secretary of Defense for Acquisition & Technology
USEUCOM	U.S. European Command
USFIB	U.S. Foreign Intelligence Board
USFK	U.S. Forces Korea
USGS	United States Geological Survey
USMC	United States Marine Corps

USMCR	United States Marine Corps Reserve
USMTF	U.S. Message Text Format
USMTF	U.S. Message Transfer Format
USN	United States Navy
USNI	Universal Simulator Network Interface
USNO	United States Naval Observatory
USO	Unix Software Organization
USPACOM	U.S. Pacific Command
USSOCOM	U.S. Special Operations Command
USSOUTHCOM	U.S. Southern Command
USSPACOM	U.S. Space Command
USTRANSCOM	U.S. Transportation Command
UT	Universal Time
UTC	Universal Coordinated Time
UTE	Unmanned Threat Emitter
UTM	Universal Transverse Mercator
UTSS	Universal Threat System for Simulators
UUCP	Unix-to-Unix Copy
UW	Unconventional Warfare
UWEF	Underwater Evaluation Facility

V&V	Verification and Validation
VV&A	Verification, Validation and Accreditation
VV&C	Verification, Validation and Certification
VA	Veteran’s Affairs, Department of
VAIDC	Video Artificial Intelligence Data Collection
VALAD	Voice Activated Logistics Anchor Desk
VBR	Variable Bit Rate
VCR	Virtual Cassette Recorder
VE	Virtual Environment
VEMPS	Vertically Polarized Electromagnetic Pulse Simulator
VGDEM	Variable Generalized Digital Environmental Model
VHSIC	Very High Speed Integrated Circuit
VIC	Vector in Commandos Model
VIGS	Video Disk Gunnery Simulator
VISTA	Variable Stability In-Flight Simulator Test Aircraft
VIT	Virtual Interactive Target
VLSHSIC	Very Large Scale High Speed Integrated Circuitry
VM	Virtual Memory
VME	Virtual Memory Extension
VMF	Variable Message Format
VMS	Vertical motion simulator
VMU	Voice Message Unit
VPD	Virtual Prototype Demonstration
VPG	Virtual Proving Ground
VPL	Virtual Programming Language
VR	Virtual Reality
VRML	Virtual Reality Modeling Language
VRPE	Virtual Reality Presentation Engine
VRT	Variable Resolution Terrain Model
VSF	Vetronics Simulation Facility
VSR	Visual Stimulation Research
VSTI	Vehicle Signature Test Instrumentation
VSU	Virtual Simulation Units
VT	Virtual Terminal
VTC	Video-Tele-Conference
VTT	Video-Tele-Training

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WAIDS	Washington Area Imagery Dissemination System
WAIS	Wide Area Information Server
WAM	Wave Amplitude Model
WAN	Wide Area Network
WARSIM	Warfighters Simulation
WASPS	War-at-Sea Planning System
WAVES	Weather and Atmospheric Visualization Effects for Simulation
WB	WAR Breaker
WBMOD	Wide Band Scintillation Model
WBPDU	White Board Protocol Data Unit
WBS	Work Breakdown Structure
WBSS	Wideband Digital Switching System
WBSV	Wideband Secure Voice
WCSD	Wargaming and Combat Simulation Division
WEAM	Weapons Effectiveness Analysis Model
WEPTAC	Weapons and Tactics Analysis Center
WES	Waterways Experiment Station
WEST	Weather Environment Simulation Technology
WEST	Weapons Effectiveness Simulated Threat
WFS	Weapon Fire Simulator
WGS 84	World Geodetic System 1984
WISDIM	Warfighting and Intelligence Systems Dictionary for Information Management
WISSARD	What if SImulation System for Advanced Research and Development
WMASC	Weapons Modification and Simulation Capability
WORM	Write Once - Read Many
WPC	Warrior Preparation Center
WPE	Word Processing Equipment
WPS	Wideband Packet Switch
WRAP	Wide Area Rapid Acoustic Prediction
WRDB	Water Resources Data Base
WWMCCS	World Wide Military Command and Control System
WWOLS	World Wide On-Line System
WWW	World Wide Web

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X

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Y

YPG Yuma Proving Ground

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Z

ZULU	Greenwich Mean Time

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PART II
DEFINITIONS

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3-D. Three-dimensional, refers to the visual display that exhibits breadth, height and thickness or depth. Standard 2-D computer images and television displays create a flat image with only height and breadth. [DSMC 2]

6 DOF. Six degrees of freedom, refers to the number of simultaneous directions or inputs a sensor can measure. Typically used to describe the combination of spatial positions (X, Y, Z) and orientation (roll, pitch, yaw). [DSMC 2]

Absorbing Markov Chain Model. A Markov chain model that has at least one absorbing state and in which from every state it is possible to get to at least one absorbing state. [DIS; IEEE]

Absorbing State. In a Markov chain model, a state that cannot be left once it is entered. [DIS; IEEE]

Abstraction. Abstraction denotes the essential characteristics of an object that distinguish it from all other kinds of objects and thus provide crisply defined conceptual boundaries, relative to the perspective of the user. [DMSO 93 SAFOR Survey]

Accessibility. The ease of approaching, entering, or obtaining. [DoD 8320.1-M-3]

Accreditation. The official certification that a model or simulation is acceptable for use for a specific purpose. [DoDD 5000.59; DIS; DOD 5000.59-P; DODI 5000.XX]

Accreditation Agent. The organization designated by the accreditation sponsor to conduct an accreditation assessment for a M&S application. [DoDI 5000.XX]

Accreditation Authority. An individual occupying a position with the appropriate rank, grade, responsibility and/or authority to accredit a model, simulation, or federation of models and/or simulations for a particular purpose or purposes. [DoDI 5000.XX]

Accreditation Process. The procedure followed by the M&S application sponsor that culminates in the accreditation determination. [DA PAM 5-11]

Accreditation Sponsor. The DoD Component or other organization with the responsibility for accrediting a model, simulation, or federation of models and/or simulations for a specific use or series of uses (e.g., for joint training or a Defense Acquisition Board milestone review). [DoDI 5000.XX]

Accuracy. The degree of exactness of a model or simulation, high accuracy implying low error. [DIS]

Action Plans. A plan for addressing one of the sub-objectives identified in the main body of the DoD M&S Master Plan. Each Action Plan outlines the needs associated with its sub-objective, states a vision or target state to be reached to address those needs, and a road map that outlines current, planned, or suggested activities that must be performed to reach the target state. [DOD 5000.59-P]

Activity. In modeling and simulation, a task that consumes time and resources and whose performance is necessary for a system to move from one event to the next. [IEEE]

Activity-Based Simulation. A discrete simulation that represents the components of a system as they proceed from activity to activity; for example, a simulation in which a manufactured product moves from station to station in an assembly line. [DIS]

Activity Models. Models of the processes that make up the functional activity showing inputs, outputs, controls, and mechanisms through which the processes of the functional activity are (or will be) conducted. [DoD 8320.1-M]

Ada. A high order computer language designed and developed to DoD requirements for modular standard language. While the original focus was for real-time embedded software, Ada has also been used for a variety of other software systems including some simulation systems. [DSMC 1]

Advanced Concept Technology Demonstration (ACTD). Technology demonstrations that are tightly focused on specific military concepts and that provide the incorporation of technology into a warfighting system is still at an informal stage. The ACTDs have three motivations: 1) to have the user gain an understanding of and to evaluate the military utility before committing to

acquisition; 2) to develop corresponding concepts of operation and doctrine that make best use of the new capability; and 3) to provide the residual operational capability to the forces. ACTDs are of militarily significant scope and of a size sufficient to establish utility. [Defense S&T Strategy, 1994]

Advanced Distributed Simulation (ADS). A set of disparate models or simulations operating in a common synthetic environment in accordance with the Distributed Interactive Simulation (DIS) standards. The ADS may be composed of three modes of simulation: live, virtual and constructive which can be seamlessly integrated within a single exercise. See also: live simulation; virtual simulation; constructive simulation. [DIS]

Aggregate Level Simulation Protocol (ALSP). A family of simulation interface protocols and supporting infrastructure software that permit the integration of distinct simulations and war games. Combined, the interface protocols and software enable large-scale, distributed simulations and war games of different domains to interact at the combat object and event level. The most widely known example of an ALSP confederation is the Joint/Service Training Confederation (CBS, AWSIM, JECEWSI, RESA, MTWS, TACSIM, CSSTSS) which has provided the backbone to many large, distributed, simulation-supported exercises. Other examples of ALSP confederations include confederations of analytical models that have been formed to support US Air Force, US Army, and US TRANSCOM studies. [DOD 5000.59-P]

Aggregation. The ability to group entities while preserving the effects of entity behavior and interaction while grouped. See also: disaggregation. [DOD 5000.59-P]

Algorithm. A prescribed set of well-defined, unambiguous rules or processes for the solution of a problem in a finite number of steps. [DSMC 1]

Algorithm Checks. A rigorous verification of the mathematics of an algorithm to ensure freedom from any errors in the expression (e.g., incorrect signs, incorrect variables applied in the equations, derivation errors) and to ensure that the algorithms are consistent with their stated intents. [DIS]

Alternate Key. Property or characteristic that can be used as a secondary identifier for an entity or entity class. [DoD 8320.1-M-X]

Analytical Model. A model consisting of a set of solvable equations; for example, a system of solvable equations that represents the laws of supply and demand in the world market.[IEEE; DIS]

Architecture. The structure of components in a program/system, their interrelationships, and the principles and guidelines governing their design and evolution over time. [DOD 5000.59-P]
Artificial Intelligence (AI). The part of computer science concerned with designing intelligent computer systems, that is, systems that exhibit the characteristics usually associated with intelligence in human behavior -- understanding language, learning, reasoning, solving problems, and so on. [Hndbk of Artfcl Intell]

Associative Entity. An entity that inherits its primary key from two or more other entities (those that are associated). An associative entity is used to represent many-to-many relationships. [JDBE]

Asynchronous Transmission. Transmission in which each information character is individually synchronized (usually by the use of start elements and stop elements). [MSETT]

Asynchronous Transfer Mode (ATM). A multiplexing protocol based on a small 53-byte fixed-length cell designed to efficiently transfer several sources of data over a single carrier at high speeds. [DMSO]

Atmosphere. A kind of mission space entity. The mass of air surrounding the earth and the features embedded within it, including clouds, smoke, and fog. [DMSO]

Attribute. A property or characteristic of one or more entities; for example, COLOR, WEIGHT, SEX. Also, a property inherent in an entity or associated with that entity for database purposes. [DoD 8320.1-M; DoD 8320.1-M-1; FIPS Pub 11-3]

Attribute Fidelity. An enumerated value representing the degree of the object state uncertainty inherent in published values of the attribute. [DMSO]

Attribute Overloading. The ability of an attribute to carry one

of two or more separate facts. [JDBE]

Attribute Ownership. The property of a simulation that gives it the responsibility to publish values for a particular object attribute. [DMSO]

Attributive Entity. An entity that has the same primary key as the parent and additional attributes that eliminate the occurrence of repeating groups in the parent. [DoD 8320.1-M-X]

Authoritative Data Source. A data source whose products have undergone producer data VV&C activities. [Army]

Authoritative Representation. Models, algorithms, and data that have been developed or approved by a source which has accurate technical knowledge of the entity or phenomenon to be modeled and its effects.[DOD 5000.59-P]

Automated Forces (AFOR). The most automated of the computer generated forces which requires little or no human interaction. [DOD 5000.59-P]

Automated Information System (AIS). A combination of computer hardware and computer software, data, and/or telecommunications that performs functions such as collecting, processing, storing, transmitting, and displaying information. Excluded are computer resources, both hardware and software, that are: physically part of, dedicated to, or essential in real time to the mission performance of weapon systems; used for weapon system specialized training, simulation, diagnostic test and maintenance, or calibration; or used for research and development of weapon systems. [DoD 8320.1-M]

Autonomous. A battlefield entity which does not require the presence of another battlefield entity in order to conduct its own simulation in the battlefield environment is said to be autonomous. All DIS compliant battlespace entities are autonomous in that they are responsible for creating their own view of the environment. [MSETT]

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Battlefield Entity. A simulation entity which corresponds to actual equipment, supplies, and personnel that can be seen or sensed on a real battlefield. Platform level battlefield entities include aircraft, ships, armor vehicles, dismounted infantry soldiers, guided missiles, command posts, trucks, etc. Unit level entities, such as platoons, companies, etc. can be considered as battlefield entities, but they will not be DIS compliant until the standards are broadened to incorporate them. A battlefield entity incorporates a direct soldier/machine interface which replicates the soldier/machine interface of the actual battlefield entity. [MSETT]

Battlefield View. See: entity perspective. [DIS]

Battlespace. Battlespace refers both to the physical environment in which the simulated warfare will take place and the forces that will conduct the simulated warfare. All elements which support the front line forces (e.g., logistics, intelligence) are included in this definition of battlespace. [DOD 5000.59-P]

Battlespace Data Base. Database which defines the specific domain of an engagement. It includes the parametric data needed to generate an operating version of the SIMWORLD. When combined with the SESSION data base (which provides the scenario and other simulation specific data), the BATTLESPACE can generate an exercise. The BATTLESPACE in all caps is used as a shortened notation for "Battlespace Data Base." [MSETT]

Battlespace Entity. A simulation entity which corresponds to actual equipment, supplies, and personnel that can be seen or sensed on a real battlefield. [MSETT]

Behavior. For a given object, how attribute value changes affect (or are affected by) the object attribute value changes of the same or other objects. [DMSO]

Benchmark. The activity of comparing the results of a model or simulation with an accepted representation of the process being modeled. [DIS]

Benchmarking. The comparison between a model’s output and the outputs of other models or simulations, all of which represent the same input and environmental conditions. [MORS]

Best Effort Service. A communication service in which transmitted data is not acknowledged. Such data typically arrives in order, complete and without errors. However, if an error occurs, or a packet is not delivered, nothing is done to correct it (e.g., there is no retransmission). [IEEE]

Bit. The smallest unit of information in the binary system of notation. [DIS; IEEE]

Black Box Model. A model whose inputs, outputs, and functional performance are known, but whose internal implementation is unknown or irrelevant; for example, a model of a computerized change-return mechanism in a vending machine, in the form of a table that indicates the amount of change to be returned for each amount deposited. Syn: input/output model. Contrast with: glass box model. [DIS; IEEE]

Boundary Condition. The values assumed by the variables in a system, model, or simulation when one or more of them is at a limiting value at the edge of the domain of interest. Contrast with: final condition; initial condition. [DIS; IEEE]

Broadcast. A transmission model in which a single message is sent to all network destinations, i.e., one-to-all. Broadcast is a special case of multicast. Contrast with: multicast; unicast. [DIS; IEEE]

Browsing. Opportunity for users to freely examine and peruse through the contents of a database. [DMSO]

Built-in-Simulation. A special-purpose simulation provided as a component of a simulation language; for example, a simulation of a bank that can be made specific by stating the number of tellers, number of customers, and other parameters. [DIS; IEEE]

Built-in-Simulator. A simulator that is built-in to the system being modeled; for example, an operator training simulator built into the control panel of a power plant such that the system can operate in simulator mode or in normal operating mode. [DIS; IEEE]

Bundling. The process of packing separate Protocol Data Units (PDU) into composite or aggregated PDU. Contrast with: unbundling. [DIS]

Business Rule. A statement or fact that defines the constraints and relationships between data elements. [DoD 8320.1-M-X]

Glossary - C

C++ (C-Plus-Plus). A high order computer language used extensively in commercial software. C++ is an object oriented extension to the C language. [DSMC 1]

Candidate Key. An attribute or group of attributes that might be chosen as a primary key. [JDBE]

Cardinality. A statement of the number of entity instances that may or must participate at each end of a relationship. [JDBE]

Cardinality. Number of objects in the simulation. [DMSO]

Catalogue. An enumeration of M&S data, or other items arranged systematically with descriptive details such as setup time, running time, developer, point of contact, etc. [DMSO]

Category I. A time management discipline that generally computes simulation time as the combination of scaled wall clock time plus an offset value. Category I simulations are often referred to as real time simulations. [DMSO]

Category II. A time management discipline that generally computes simulation time as a function of the most recent value of simulation time and the simulation's current state. Category II simulations are often referred to as logical time simulations. [DMSO]

Cell. A cell is a set of simulation entities using fully consistent databases and simulations, i.e. the simulation models have been specifically designed to work together. All entities within a cell must have unrestricted broadcast of datagram messages to all other entities within the cell. By definition, the entities in a cell are homogeneous, and at the same security classification level. For example, a set of interconnected SIMNET simulators using the same terrain database constitute a cell. A cell is usually located on a single local network, but it is possible to distribute one over a wide area network if sufficient bandwidth is available and latency is low enough to maintain coherency. If any type of interface is required to network with a remote site, the two sites are different cells. [MSETT]

Cell Interface Unit (CIU). A processing module which interfaces a Distributed Interactive Simulation (DIS) Standard Cell with the virtual network. One device is required for each standard cell. CIUs provide intercell services such as message filtering, translation of messages, data compression, and aggregation/ disaggregation of simulation entities operating at different representation levels. [MSETT]

Cell Adapter Unit (CAU). A CAU interfaces a non-standard cell with the virtual network. It is functionally equivalent to a CIU, except that it adapts non-DIS cells to the DIS network by translating their messages to DIS PDUs and performs other services necessary to make their output DIS compliant. It also translates DIS PDUs into the format needed by the non-standard cells. [MSETT]

Central Station. A computer connected to a local area network that transmits/receives simulation management protocol data units at the direction of the simulation manager. [MSETT]

Class. A description of a group of objects with similar properties, common behavior, common relationships, and common semantics. [DMSO]

Class Word. A word in the name of a data element describing the category to which the data element belongs; e.g., “date”, “name”, “code.” The word establishes the general structure and domain of a standard data element.[DoD 8320.1-M-1; DoD 8320.1-M-X; NBS Special Pub 500-149]

Closed-Form Solution. A closed-form solution for representing time in dynamic models is a method in which the states or statuses of resources are described as explicit and computationally tractable functions of time. Thus, the status of a resource at time “t” can be found by evaluating the appropriate function at “t”, without having to simulate combat from the start of that combat through time “t”. [MORS SIMTAX]

Code Verification. A rigorous audit of all compilable code to ensure that the representations of verified logic have been properly implemented in the computer code. [DA PAM 5-11; DSMC]

Coenetic Variable. In modeling, a variable that affects both the system under consideration and that system’s environment. [IEEE]

Cohesion. Cohesion refers to the degree to which the contents of a module are logically related. [DMSO 93 SAFOR Survey]

Combatant Command (s). One of the unified or specified combatant commands established by the President of the United States. (Combatant Commands currently include: US Atlantic Command (USACOM); US Central Command (USCENTCOM); US European Command (USEUCOM); US Pacific Command (USPACOM); US Southern Command (USSOUTHCOM); US Space Command (USSPACOM); US Special Operations Command (USSOCOM); US Strategic Command (USSTRATCOM); and, US Transportation Command (USTRANSCOM)). [DoDD 5000.59; DOD 5000.59-P; DoDI 5000.XX]

Command and Control Warfare (C2W). The integrated use of operations security (OPSEC), military deception, psychological operations (PSYOP), electronic warfare (EW), and physical destruction, mutually supported by intelligence, to deny information to, influence, degrade, or destroy adversary C2 capabilities, while protecting friendly C2 capabilities against such actions. [DOD 5000.59-P]

Command Forces (CFOR). An ARPA ADS Program with the goal to represent C^4I in DIS. [DOD 5000.59-P]

Commander-in-Chief (CINC). A position established under the authority of Title 10, United States Code, to designate an officer assigned by the President as the commander of a Combatant Command and who is directly responsible to the President of the United States and Secretary of Defense for the performance of missions assigned to that command by the President or by the Secretary of Defense with the approval of the President. Subject to the direction of the President, the commander of a combatant command (a) performs his duties under the authority, direction, and control of the Secretary of Defense and (b) is directly responsible to the Secretary of Defense for the preparedness of the command to carry out missions assigned to the command. [DoDD 5000.59; DOD 5000.59-P; DoDI 5000.XX]

Common Data Base. A general term used to describe the collection

of DIS compliant data base libraries, specifications and standards. Exercise data bases (including all cell and intercell data bases) draw from the DIS CDB and are constrained by the standards imposed by the DIS CDB. [MSETT]

Common-Use M&S. M&S applications, services, or materials provided by a DoD Component to two or more DoD Components.[DoDD 5000.59]

Complex Data. Data that cannot be characterized as a single concept, atomic data element as defined in DoD 8320.1-M-1. Complex data includes most scientific and technical data. It has been recently categorized by the Complex Data Task Force into: (a) highly derived data (e.g., probability hit/kill); (b) objects utilizing the concepts of multiple inheritance (e.g., student-assistant is subclass of student class and employee class), multiple root hierarchies (e.g., a tank is a vehicle and a tank is a weapon where “vehicle” and “weapon” are each roots), and polymorphic attributes (e.g., “capacity” for different types of aircraft may mean number of people, pounds of cargo, or gallons of fuel); (c) compositions such as command hierarchies, road networks, images (binary large objects (BLOBS), compound documents; and (d) artifacts of legacy systems and physical constraints (e.g., aircraft category and mission in one data element, intelligence facility code where the first few bytes define how the rest of the field is used. [DOD 5000.59-P]

Composite Attribute. A single attribute that is composed of a specific set of identifiable pieces of information; e.g., an address made up of a street number, city, state, and zip code. [JDBE]

Composition. A named subset of the simulations in a particular federation intended to achieve some particular objective distinct from the federation. [DMSO]

Compression. Any of several techniques that reduce the number of bits required to represent information in data transmission or storage, therefore conserving bandwidth and/or memory, wherein the original form of the information can be reconstructed; also called compaction. [MSETT]

Computational Model. A model consisting of well-defined procedures that can be executed on a computer; for example, a

model of the stock market, in the form of a set of equations and logic rules. [IEEE]

Computer Generated Forces (CGF). A generic term used to refer to computer representations of forces in simulations that attempts to model human behavior sufficiently so that the forces will take some actions automatically (without requiring man-in-the-loop interaction). Also referred to as Semi-automated Forces (SAFOR). DoD programs addressing various levels of computer automation of forces include Command Forces, Intelligent Forces, Modular Semi-Automated Forces, Integrated Tactical Environment Management System, and Close Combat Tactical Trainer Semi-Automated Forces. [DoD 5000.59-P]

Computer Hardware. Devices capable of accepting and storing computer data, executing a systematic sequence of operations on computer data, or producing control outputs. Such devices can perform substantial interpretation, computation, communication, control, or other logical functions. [DoD Std 2167A]

Computer Resources. The totality of computer hardware, firmware, software, personnel, documentation, supplies, services, and support services applied to a given effort. [DoDI 5000.2]

Computer Simulation. A dynamic representation of a model, often involving some combination of executing code, control/display interface hardware, and interfaces to real-world equipment. [DMSO]

Computer Software (or Software). A combination of associated computer instructions and computer data definitions required to enable the computer hardware to perform computational or control functions. [DoDI 5000.2]

Computer Software Documentation. Technical data or information, including computer listings and printouts, which documents the requirements, design, or details of computer software, explains the capabilities and limitations of the software, or provides operation instructions for using or supporting computer software during the software's operational life. [DoDI 5000.2]

Computer War Game. A technique by which different concepts, different pieces of hardware, or different military plans can be

investigated in a multi-sided confrontation using a computer to generated displays of the battlefield and perform computations of outcomes. [AFI 16-102; DSMC 1]

Conceptual Model. A statement of the content and internal representations which are the user's and developer's combined concept of the model. It includes logic and algorithms and explicitly recognizes assumptions and limitations. [DIS]

Conceptual Schema. Descriptive representation of data and data requirements that supports the "logical" view or data administrator's view of the data requirement. This view is represented as a semantic model of the information that is stored about objects of interest to the functional area. This view is an integrated definition of the data that is unbiased toward any single application of data and is independent of how the data is physically stored or accessed. [DoD 8320.1-M]

Concrete Model. A model in which at least one component represented is a tangible object; for example, a physical replica of a building. [DIS; IEEE]

Concurrent Engineering. Concurrent engineering is a systematic approach to the integrated, concurrent design of products and their related processes, including manufacture and support. This approach is intended to cause the developers, from the outset, to consider all elements of the product life cycle from conception through disposal, including quality, cost, schedule, and user requirements. See also: Integrated Product and Process Development (IPPD). [DMSO]

Condition. The values assumed at a given instant by the variables in a system, model, or simulation. See also: boundary condition; final condition; initial condition; state. [IEEE; DIS]

Conditional Event. A sequentially dependent event that will occur only if some other event has already taken place. See also: time-dependent event. [IEEE; DIS]

Configuration. A collection of an item's descriptive and governing characteristics, which can be expressed a) in functional terms, i.e., what performance the item is expected to achieve; and (b) in physical terms, i.e., what the item should look like and consist of when it is built. [DoDI 5000.2]

Configuration Item (CI). An aggregation of hardware, firmware, or computer software or any of their discrete portions, which satisfies an end use function and is designated by the Government for separate configuration management. Configuration items may vary widely in complexity, size, and type, from an aircraft, electronic, or ship system to a test meter or round of ammunition. Any item required for logistic support and designated for separate procurement is a configuration item. [DoDI 5000.2]

Configuration Management. The application of technical and administrative direction and surveillance to identify and document the functional and physical characteristics of a model or simulation, control changes, and record and report change processing and implementation status. [DA PAM 5-11; Army Mstr Plan; USMC Mstr Plan]

Consistency. Data is maintained so that it is free from variation or contradiction. [DoD 8320.1-M; DoD 8320.1-M-3]
Constant. A quantity or data item whose value cannot change. [IEEE]

Constructive Model or Simulation. See Live, Virtual and Constructive Simulation. [DOD 5000.59-P]

Continuous Model. A mathematical or computational model whose output variables change in a continuous manner. Contrast with: Discrete Model. [IEEE; DIS]

Continuous Simulation. A simulation that uses a continuous model. [DIS; IEEE]

Continuous System. A system for which the state variables change continuously with respect to time. [DSMC 1]

Control Station. Facility which provides the individual responsible for controlling the simulation and which provides the capability to implement simulation control as Protocol Data Units (PDUs) on the Distributed Interactive Simulation (DIS) network. [DIS]

Controllability. In respect to user interface of SAFORs, this is the ability of a user to dynamically change the tactics or behavior of a force during the course of an exercise easily and efficiently, or to stop and restart an exercise from some interim

point in time. [IDMSO]

Cooperative Development. A project in which two or more DoD Components share in domain research, technical studies, or technology development that may result in dissimilar M&S applications.[DoDD 5000.59; DODI 5000.XX; DSMC 1; MSETT]

Coordinate. Linear or angular quantities which designate the position that a point occupies in a given reference frame or system. Also used as a general term to designate the particular kind of reference frame or system, such as Cartesian coordinates or spherical coordinates. [MSETT]

Cost and Operational Effectiveness Analysis (COEA). An analysis of the estimated costs and operational effectiveness of alternative materiel systems to meet a mission need and the associated program for acquiring each alternative. [DoDI 5000.2]

Critical Event Simulation. A simulation that is terminated by the occurrence of a certain event; for example, a model depicting the year-by-year forces leading up to a volcanic eruption, that is terminated when the volcano in the model erupts. See also: time-slice simulation. [DIS; IEEE]

Cross-Functional Integration. The melding of acquisition functions (such as design analysis with logistics analysis) involving shared modeling and simulation data and information. [DSMC 1]

Cultural Features. Features of the environment that have been constructed by man. Included are such items as roads, buildings, canals, marker buoys; boundary lines, and, in a broad sense, all names and legends on a map. [DMSO]

Cybernetics. The study of human control functions and the mechanical and electronic systems designed to replace or emulate them, including computers. “Cyber,” as a prefix, denotes anything related to computer environments, especially things that involve extensive interaction by the user. [DSMC 2]

Cyberspace Any shared reality based computer connections. While virtual reality is a form of cyberspace, cyberspace is not a virtual reality. Also, a science-fiction term coined by William Gibson in his book *Neuromancer* to describe a virtual universe within a global computer network allegorical to the current telephone system, but providing a multisensory experience of “being there,” not just an auditory experience. [DSMC 2]

Glossary - D

Data. A representation of facts, concepts, or instructions in a formalized manner suitable for communication, interpretation, or processing by humans or by automatic means. [DoD 8320.1-M; DoD 8320.1-M-1; DoD 8320.1-M-X; DIS; FIPS Pub 11-3]

Data Administration (DAdm). The responsibility for definition, organization, supervision, and protection of data within an enterprise or organization. [DoDD 8320.1; DoD 8320.1-M]

Data Administrator (DAd). A person or group that ensures the utility of data used within an organization by defining data policies and standards, planning for the efficient use of data, coordinating data structures among organizational components, performing logical database design, and defining data security procedures. See also: Data Steward. [DoDD 8320.1; DoD 8320.1-M; DoD 8320.1-M-1; DoD 8320.1-M-X; NBS Special Pub 500-152]

Data Architecture. The framework for organizing and defining the interrelationships of data in support of an organization's missions, functions, goals, objectives, and strategies. Data architectures provide the basis for the incremental, ordered design and development of databases based on successively more detailed levels of data modeling. [DoD 8320.1-M; DoD 8320.1-M-X]

Data Attribute. A characteristic of a unit of data such as length, value, or method of representation. [DoD 8320.1-M-1; FIPS Special Pub 500-152]

Data Center. An organization which serves as a conduit between data sources and data customers. The data center may transform these data as necessary to meet the operational requirements, format, security, and data VV&C provisions of its sources and supported users.[Army]

Data Certification. The determination that data have been verified and validated. Data user certification is the determination by the application sponsor or designated agent that data have been verified and validated as appropriate for the specific M&S usage. Data producer certification is the determination by the data producer that data have been verified and validated against documented standards or criteria. [DOD

5000.59-P]

Data Collection. The process of obtaining information that supports a functional activity, or information requirement. [DoD 8320.1-M]

Data Customer. An organization which uses data from a data source or center. [Army]

Data Dictionary. A specialized type of database containing metadata that is managed by a data dictionary system; a repository of information describing the characteristics of data used to design, monitor, document, protect, and control data in information systems and databases; an application of a data dictionary system. [DoDD 8320.1; DoD 8320.1-M-1; DoD 8320.1-M-X]

Data Dictionary System. An automated system such as an IRDS that can support one or more data dictionaries. A system specifically designed for managing a data dictionary. [NBS Special Pub 500-152]

Data Element. A basic unit of information having a meaning and subcategories (data items) of distinct units and values (e.g., address). [JCS Pub 1-02; DoDD 8320.1]

Data Element Standardization. The process of documenting, reviewing and approving unique names, definitions, characteristics and representations of data elements according to established procedures and conventions. [DoD 8320.1-M-1; DoD 8320.1-M-X]

Data Entity. An object of interest to the enterprise, usually tracked by an automated system. [DoD 8320.1-M; DoD 8320.1-M-1; NBS Special Pub 500-149]

Data Exchange Standard. Formally defined protocols for the format and content of data messages used for interchanging data between networked simulation and/or simulator nodes used to create and operate a distributed, time and space coherent synthetic environment. Current standards are ALSP and DIS PDUs. [Army Mstr Plan]

Data Integrity. In information processing, the condition in which data is accurate, current, consistent, and complete [DoD 8320.1-M]

Data Logger. A device that accepts Protocol Data Units (PDUs) from the network and stores them for later replay on the network

in the same time sequence as the PDUs were originally received. See also: Protocol Data Unit. [DIS; IEEE]

Data Model. In a database, the user's logical view of the data in contrast to the physically stored data, or storage structure. A description of the organization of data in a manner that reflects the information structure of an enterprise. [DoD 8320.1-M; DoD 8320.1-M-1; FIPS Pub 11-3]

Data Quality. The correctness, timeliness, accuracy, completeness, relevance, and accessibility that make data appropriate for use. Quality statements are required for source, accuracy (positional and attribute), up-to-dateness/currency, logical consistency, completeness (feature and attribute), clipping indicator, security classification, and releasability. [DOD 5000.59-P;DoD 8320.1-M]

Data Repository. A specialized database containing information about data, such as meaning, relationships to other data, origin, usage, and format, including the information resources needed by an organization. [DoD 8320.1-M]

Data Security. The protection of data from accidental or intentional modification or destruction and from accidental or intentional disclosure to unauthorized personnel. [DoD 8320.1-M]

Data Source. An organization or subject matter expert who, because of either mission or expertise, serves as a data producer. [Army]

Data Standardization. The process of documenting, reviewing, and approving unique names, definitions, characteristics and representations of data according to established procedures and conventions. [DoD 8320.1-M; DoD 8320.1-M-1]

Data Steward. Syn: data administrator.

Data Structure. The logical relationships which exist among units of data and the descriptive features defined for those relationships and data units; an instance or occurrence of a data model. [DoD 8320.1-M-1; DoD 8320.1-M-X; NBS Special Pub 500-152]

Data Synchronization. The timing requirements of a data element, or between and/or among data elements. [DoD 8320.1-M]

Data Validation. The documented assessment of data by subject area experts and its comparison to known values. Data user validation is an assessment as appropriate for use in an intended model. Data producer validation is an assessment within stated criteria and assumptions. [DOD 5000.59-P]

Data Value. A value associated with a data element. One of the allowable values of a data element. Synonym of “a data item.” [DoD 8320.1]

Data Verification. Data producer verification is the use of techniques and procedures to ensure that data meets constraints defined by data standards and business rules derived from process and data modeling. Data user verification is the use of techniques and procedures to ensure that data meets user specified constraints defined by data standards and business rules derived from process and data modeling, and that data are transformed and formatted properly. [DOD 5000.59-P]

Data Verification, Validation & Certification (VV&C). The process of verifying the internal consistency and correctness of data, validating that it represents real world entities appropriate for its intended purpose or an expected range of purposes, and certifying it as having a specified level of quality or as being appropriate for a specified use, type of use, or range of uses. The process has two perspectives: producer and user process.[DOD 5000.59-P]

Database. A collection of interrelated data, often with controlled redundancy, organized according to a schema to serve one or more applications; the data are stored so that they can be used by different programs without concern for the data structure or organization. A common approach is used to add new data and to modify and retrieve existing data.[DoD 8320.1-M; DoD 8320.1-M-1; DoD 8320.1-M-X; FIPS Pub 11-3]

Database Administration (DBAdm). The activity responsible for the enforcement of the policies and standards established by the data administrator, to include providing technical support for physical database definition, design, implementation, maintenance, integrity, and security; and coordinating with computer operations technicians, system developers, vendors, and users. Database administration is oriented toward technical support for databases and the effective and efficient use of information technology resources.[DoD 8320.1-M]

Database Administrator (DBAd). A person or group that enforces policy of "how," "where," and "in what manner," data is stored and maintained in each database. Provides information to the Data Administrator (DA) on organizational use of data within the subject database. [DoDD 8320.1; I/DB]

Database Directory. A database of entries each of which represents information about a database or a directory of databases. Information includes the name of a database or directory, ownership, point of contact, access path to the database or directory, description of purpose of database. [DMSO]

Database Management System (DBMS). A system that provides the functionality to support the creation, access, maintenance, and control of databases, and that facilitates the execution of application programs using data from these databases.[I/DB]

Dead Reckoning. The process of extrapolating emulation entity position/orientation based on the last known position/orientation, velocity, and (sometimes) higher-order derivatives of position vs. time and/or other vehicle dynamic characteristics. Syn: remote entity approximation (REA). [DIS]

Deaggregate. See: disaggregate.

Defense Simulation Internet (DSI). A wide-band telecommunications network operated over commercial lines with connectivity to both military and civilian satellites, allowing users to be linked on a world-wide wide-area network (WAN). [DOD 5000.59-P]

Dependent Variable. A variable whose value is dependent on the values of one or more independent variables. Contrast with: independent variable. [DIS; IEEE]

Derived Federation Object Model (DFOM). A selected set of details derived from the Federation Object Model that are important to the correct operation of the Runtime Infrastructure (RTI). [DMSO]

Descriptive Model. A model used to depict the behavior or properties of an existing system or type of system; for example, a

scale model or written specification used to convey to potential buyers the physical and performance characteristics of a computer. Contrast with: prescriptive model. [DIS; IEEE]

Deterministic. Pertaining to a process, model, simulation or variable whose outcome, result, or value does not depend upon chance. Contrast with: stochastic. [DIS]

Deterministic Algorithm. A process that yields a unique and predictable outcome for a given set of inputs.[AFI 16-102; DSMC 1]

Deterministic Model. A model in which the results are determined through known relationships among the states and events, and in which a given input will always produce the same output; for example, a model depicting a known chemical reaction. Contrast with: stochastic model. [DIS; IEEE]

Digital Simulation. (l) A simulation that is designed to be executed on a digital system. (2) A simulation that is designed to be executed on an analog system but that represents a digital system . (3) A simulation of a digital circuit. Contrast with: analog simulation. See also: hybrid simulation. [DIS; IEEE]

Disaggregate. An activity which decomposes an aggregate entity into multiple entities. [DIS]

Disaggregation. The ability to represent the behavior of an aggregated unit in terms of its component entities. If the aggregate representation did not maintain state representations of the individual entities, then the decomposition into the entities can only be notional. [DOD 5000.59-P]

Discrete Model. A mathematical or computational model whose output variables take on only discrete values; that is, in changing from one value to another, they do not take on the intermediate values; for example, a model that predicts an organization’s inventory levels based on varying shipments and receipts. Contrast with: continuous model. [DIS; IEEE]

Discrete Simulation. A simulation that uses a discrete model. [DIS; IEEE]

Discrete System. A system for which the state variables change instantaneously at separated points in time. [AFI 16-102; DSMC 1]

Distributed Interactive Simulation (DIS). (1) Program to electronically link organizations operating in the four domains: advanced concepts and requirements; military operations; research, development, and acquisition; and training. (2) A synthetic environment within which humans may interact through simulation(s) at multiple sites networked using compliant architecture, modeling, protocols, standards, and data bases. [DoD 5000.59-P]

Distributed Interactive Simulation (DIS) Compatible. Two or more simulations/simulators are DIS compatible if (1) they are DIS compliant and (2) their models and data that send and interpret PDUs support the realization of a common operational environment among the systems (coherent in time and space). [DIS]

Distributed Interactive Simulation (DIS) Compliant. A simulation/ simulator is DIS compliant if it can send and receive PDUs in accordance with IEEE Standard 1278 and 1278 (Working Drafts). A specific statement must be made regarding the qualifications of each PDU. [DIS]

Distributed Interactive Simulation (DIS) Control. A mechanism which assists users of Distributed Interactive Simulation to direct or dictate aspects of a DIS exercise. See also: distributed interactive simulation. [DIS]

Distributed Interactive Simulation (DIS) Network. The simulation communications network created as a result of the connection of multiple Distributed Interactive Simulation (DIS) nodes during DIS exercises. [DIS]

Distributed Interactive Simulation (DIS) Network Interface Library. A software library required for an application to interface to the network at the revision level defined by the protocol data unit standard indicated. This is the common building block for all Distributed Interactive Simulation (DIS) architecture components. [DIS]

Distributed Interactive Simulation (DIS) Network Manager. A specified agency with the responsibility to manage the physical network used for distributed simulation. Responsibilities

include: ensuring security of network; scheduling of utilization; establishing network priorities; monitoring execution of scheduled usage; coordinating functional, technical, and user communities' network requirements. [DIS]

Distributed Interactive Simulation (DIS) Protocol Data Unit (PDU). A standard that specifies the format and structure in which data will be organized. The general purpose is to facilitate the electronic transfer of data between agencies with software; specifically, DIS PDUs are designed to enable communications between different types of simulators, simulations, and models. The Institute for Simulation and Training (IST) is providing the lead in the development of the PDU architecture for DIS. [DIS]

Distributed Interactive Simulation (DIS) User/Sponsor. Customer requiring Distributed Interactive Simulation (DIS) resources to address training, testing, operational, or analysis objectives. [DIS]

DoD Components. The Office of the Secretary of Defense (OSD), the Military Departments, the Chairman of the Joint Chiefs of Staff, the Combatant commands, the Inspector General of the Department of Defense, the Defense Agencies; and the DoD Field Activities. [DoDD 5000.59]

DoD M&S Executive Agent. A DoD Component to whom the USD(A&T) has assigned responsibility and delegated authority for the development and maintenance of a specific area of M&S application, including relevant standards and databases, used by or common to many models and simulations.[DoDD 5000.59; DOD 5000.59-P; DSMC 1]

DoD M&S Information System (MSIS). A distributed, internetted system of modeling and simulation repositories that have classified, unclassified, or both classified and unclassified M&S data and/or information that may be electronically accessed by authorized users. [DoDI 5000.XX]

DoD Publications. DoD issuances that implement or supplement DoD Directives and Instructions by providing uniform procedures for management or operational systems and disseminating administrative information. DoD Publications include: Catalogs, Directories, Guides, Handbooks, Indexes, Inventories, Lists, Manuals, Modules, Pamphlets, Plans, Regulations, and Standards that implement or supplement DoD Directives or Instructions. [DoDI 5000.XX]

Domain. The physical or abstract space in which the entities and processes operate. The domain can be land, sea, air, space, undersea, a combination of any of the above, or an abstract domain, such as an n-dimensional mathematics space, or economic or psychological domains. [MORS SIMTAX]

Dynamic Model. A model of a system in which there is change, such as the occurrence of events over time or the movement of objects through space; for example, a model of a bridge that is subjected to a moving load to determine characteristics of the bridge under changing stress. [DIS; IEEE]

Dynamic Environment. The environment is constantly changing as a result of man-made efforts (battlefield smoke) and natural phenomenon (weather). Incorporating dynamic environment into real time simulations provides a more realistic test bed for weapons, equipment, and personnel. [Army Mstr Plan]

Emitter. A device that is able to discharge detectable electromagnetic or acoustic energy. [DIS; MSETT]

Empirical. Pertaining to information that is derived from observation, experiment, or experience. [IEEE; DIS]

Emulate. To represent a system by a model that accepts the same inputs and produces the same outputs as the system represented. For example, to emulate an 8-bit computer with a 32-bit computer. [DIS; IEEE]

Emulation. (1) A model that accepts the same inputs and produces the same outputs as a given system; (2) The process of developing or using a model as in (1). See also: simulation. [IEEE; DIS;]

Emulator. A device, computer program, or system that performs emulation. [IEEE; DIS]

Encapsulation. The process of hiding the details of an object that do not contribute to its essential characteristics. [DMSO 93 SAFOR Survey]

Endogenous variable. A variable whose value is determined by conditions and events within a given model. Syn: internal variable. Contrast with: exogenous variable. [IEEE; DIS]

Enterprise. An arbitrarily-defined functional and administrative entity that exists to perform a specific, integrated set of missions and achieve associated goals and objectives, encompassing all of the primary functions necessary to perform those missions. [DoD 8320.1-M-X]

Enterprise Model. An information model(s) that presents an integrated top-level representation of processes, information flows, and data. [DoDD 8000.1; DoD 8320.1-M; DoD 8320.1-M-X]

Entity. A distinguishable person, place, thing, event, or concept about which information is kept. [JDBE]

Entity Coordinates. Location with respect to a simulation entity. [DIS]

Entity Perspective. The perception of the synthetic environment held by a simulation entity based on its knowledge of itself and its interactions with the other simulation entities. This includes not only its own view of the simulated physical environment (terrain, air, and sea), but also its own view of itself, the other entities in the synthetic environment, and of the effects of the other entities on itself and the synthetic environment. Syn: world view. [DIS]

Entity Relationship Diagram (ERD). The graphic representation of a data model. [DoD 8320.1-M-X]

Environment. The texture or detail of the domain, that is terrain relief, weather, day, night, terrain cultural features (such as cities or farmland), sea states, etc.); (2) the external objects, conditions, and processes that influence the behavior of a system (such as terrain relief, weather, day/night, terrain cultural features, etc.). [DIS]

Environmental Effect. The impact that the environment or environmental feature has on some component or process in the simulation exercise such as the propagation of energy and image formation, the performance of a weapon system, platform or sensor, or other non-visualized combat process. [DMSO]

Environmental Effect Model. A numerical model, parametric model, or database for simulating an environmental effect on an entity of a simulation exercise, such as a sensor or platform. [DMSO]

Environmental Entity. A simulation entity which corresponds to dynamic elements of the state of the geographic, atmospheric, and bathyspheric environment, of the synthetic environment, that can be seen or sensed on a real battlefield, for example, craters, smoke, building collapse, weather conditions, and sea state. [DIS]

Environmental Features. An individual element of the physical environment (e.g., a rain system, fog, cloud). [DMSO]

Environmental Model. A numerical model, parametric model, or database designed to produce an accurate and consistent data set for one or more parameters that characterize the state of the physical environment. [DMSO]

Environmental Representation. An authoritative representation of all or a part of the natural or man-made environment, including permanent or semi-permanent man-made features. [DOD 5000.59-P]

Environmental Simulation. A simulation that depicts all or part of the natural or manmade environment of a system; for example, a simulation of the radar equipment and other tracking devices that provide input to an aircraft tracking system. [IEEE]
Equilibrium. See: steady state. [DIS]

Error Model. (l) A model used to estimate or predict the extent of deviation of the behavior of an actual system from the desired behavior of the system; for example, a model of a communications channel, used to estimate the number of transmission errors that can be expected in the channel. (2) In software evaluation, a model used to estimate or predict the number of remaining faults, required test time, and similar characteristics of a system. [DIS; IEEE]

Euler Angles. A set of three angles used to describe the orientation of an entity as a set of three successive rotations about three different orthogonal axes (x, y, and z). The order of rotation is first about z by angle (psi), then about the new y by angle (theta), then about the newest x by angle (phi). Angles psi and phi range between +/- pi, while angle theta ranges only between +/- pi/2 radians. These angles specify the successive rotations needed to transform from the world coordinate system to the entity coordinate system. The positive direction of rotation about an axis is defined by the right-hand rule. [DIS]

Event. (1) An occurrence that causes a change of state in a simulation; See also: conditional event; time-dependent event. (2) The instant in time at which a change in some variable occurs. [IEEE; DIS]

Event-Oriented Simulation. A simulation in which attention is focused on the occurrence of events and the times at which those events occur; for example, a simulation of a digital circuit that focuses on the time of state transition. [DIS; IEEE]

Executive Agent. See DoD M&S Executive Agent. [DOD 5000.59-P]

Executive Council for Modeling and Simulations (EXCIMS). An organization established by the USD(A&T) and responsible for providing advice and assistance on DoD M&S issues. Membership is determined by the USD(A&T) and is at the Senior Executive Service, flag, and general officer level.[DoDD 5000.59; MSETT]

Exercise Manager. Test director or training officer who manages the setup, control, and feedback of a simulation exercise after the computer network is activated. This individual is part of the user organization. Syn: Simulation Manger. [DIS]

Exogenous Variable. A variable whose value is determined by conditions and events external to a given model. Syn: external variable. Contrast with: endogenous variable. [IEEE; DIS]

Expert System. An expert system is a knowledge collection combined with an inference engine capable of interpreting queries and chaining together separate items of knowledge to develop new inferences. The knowledge is typically causally represented as a system of rules. In some cases, expert systems can retrace their paths of inference on demand, thus explaining their conclusions and reasoning. [DSB Rpt May 1988]

Extensibility. The ability of a data structure to accommodate additional values or iterations of data over time without impacting its initial design. [DoD 8320.1-M; DoD 8320.1-M-3]

External Schema. A logical description of an enterprise that may differ from the conceptual schema upon which it is based in that some entities, attributes, or relationships may be omitted, renamed, or otherwise transformed. [DoD 8320.1-M]

Face Validation. The process of determining whether a model or simulation based on performance, seems reasonable to people who are knowledgeable about the system under study. This process does not review the software code or logic, but rather reviews the inputs and outputs to assure they appear realistic or representative. [DIS]

Fair Fight. Two or more simulations may be considered to be in a fair fight when differences in the simulations' performance characteristics have significantly less effect on the outcome of the conflict than actions taken by the simulation participants. [DIS]

Fast Time. (l) Simulated time with the property that a given period of actual time represents more than that period of time in the system being modeled; for example, in a simulation of plant growth, running the simulation for one second may result in the model advancing time by one full day; that is, simulated time advances faster than actual time. (2) The duration of activities within a simulation in which simulated time advances faster than actual time. Contrast with: real time; slow time. [DIS; IEEE]

Feature. A static element of the synthetic environment which exists but does not actively participate in synthetic environment interactions. Features are represented in the implementation environment by cartographic databases that are used by simulation assets. Entities can interact with features (building them, destroying them, colliding with them, etc.), but features are passive in that they do not initiate action. When features are dynamic (e.g., dynamic terrain) they are called environment entities. See: environmental entity; synthetic environment. [DIS]

Federation. A system of interacting models and/or simulations, with supporting infrastructure, based on a common understanding of the objects portrayed in the system. [DoDI 5000.XX; DMSO]

Federation Element. Term applied to an individual model and/or simulation that is part of a federation of models and simulations. [DoDI 5000.XX]

Federation Execution. The actual operation, over time, of a federation execution set. [DMSO]

Federation Execution Set. A subset of the simulations and a

Derived Federation Object Model
Federation Time. The time used to coordinate the activities between federation members. Runtime Infrastructure (RTI) services are specified in terms of Federation Time and are independent of the discipline used by Federation members to advance to their individual temporal states. [DMSO]

Fidelity. The accuracy of the representation when compared to the real world. [DoD 5000.59-P]

Fidelity Domain. Resource that may affect the fidelity of a Distributed Interactive Simulation (DIS) exercise. (Examples are battle space entities, environments, hosts, and sites).[DIS]

Fidelity Management. A process to level the playing field (create a fair fight) by dynamically varying fidelity parameters of dissimilar simulators in a controlled fashion. See also: fair fight. [DIS]

Field. A series of contiguous bits treated as an instance of a particular data type that may be part of a higher level data structure. [DIS; MSETT]

Field Instrumentation. An internal or external recording, monitoring, and relaying device employed by live instrumented entities, usually platform, facility, or exercise-unique, and not typically part of the operational system or equipment. These devices provide an independent source of data to assess the performance of operational systems involved in the exercise. [DIS]

Filtering. Accepting or rejecting Protocol Data Units received on the network based upon specified criteria, which may be dynamically varied. Examples include geographical filtering and entity type filtering. [DIS]

Final Condition. The values assumed by the variables in a system, model,or simulation at the completion of some specified duration of time. Syn: equilibrium condition. Contrast with: boundary condition; initial condition. [DIS; IEEE]

Final State. The values assumed by the state variables of a system, component, or simulation at the completion of some specified duration of time. [DIS; IEEE]

Firmware. The combination of a hardware device and computer instructions or computer data that reside as read-only software on the hardware device. The software cannot be readily modified under program control. [DoDI 5000.2]

Foreign Key. Property or characteristic of an entity or entity class that is inherited by another entity or entity class. Foreign keys show relationships between entities or entity classes. [DoD 8320.1-M-X]

Functional Area. A functional area encompasses the scope (the boundaries) of a set of related functions and data for which an OSD Principal Staff Assistant or the Chairman of the Joint Chiefs of Staff has DoD-wide responsibility, authority, and accountability. A functional area (e.g., personnel) is composed of one or more functional activities (e.g., recruiting), each of which consists of one or more functional processes (e.g., interviews). Also known as a business area. [DoD 5000.59-P]

Functional Data Administrator (FDAd). An FDAd is a person or group that ensure the utility of data used within the Functional Area by defining data policies and standards, planning for the efficient use of data, coordinating data structures among organizational components, performing logical database design, and defining data security procedures. [DoD 5000.59-P]

Functional Process. A well-defined (or definable) set of logically related tasks and decisions within a functional activity that use resources to produce products or services. [DoD 8320.1-M]

Functional Process Improvement. Application of a structured methodology to define a function’s “as is” and “to be” environments; current and future mission needs and end user requirements; objectives and a strategy for achieving those objectives; and a program of incremental and evolutionary improvements to processes, data, and supporting AISs that are implemented through functional, technical, and economic analysis and decision-making. [DoD 8320.1M]

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Game. A physical or mental competition in which the participants, called players, seek to achieve some objective within a given set of rules. See also: game theory. [DIS; IEEE]

Game Theory. (l) The study of situations involving competing interests, modeled in terms of the strategies, probabilities, actions, gains, and losses of opposing players in a game. See also: management game; war game. (2) The study of games to determine the probability of winning given various strategies. [DIS; IEEE]

Gateway. A device that connects two systems, especially if the systems use different protocols. For example, a gateway is needed to connect two independent local networks, or to connect a local network to a long-haul network.[MSETT]

Generic Domain. A domain type where the attribute is constrained only by the data type assigned by the data base management system (DBMS), or implied by the record type in a flat file, whichever is applicable. [JDBE]

Generic Element. A generic element is the part of a data element that establishes a structure and limits the allowable set of values of a data element. A generic element has no functional or application context other than to define a general class of data and ensure consistency in structure and domain. [DoD 8320.1-M-1; DoD 8320.1-M-X]

General-Use M&S Applications. Specific representations of the physical environment or environmental effects used by, or common to, many models and simulations; e.g., terrain, atmospheric, or hydrographic effects. [DoDD 5000.59; DoD 5000.59-P; DIS; DODI 5000.XX;]

Glass Box Model. A model whose internal implementation is known and fully visible; for example, a model of a computerized change-return mechanism in a vending machine, in the form of a diagram of the circuits and gears that make the change. Contrast with: black box model. Syn: white box model. [DIS; IEEE]

Granularity. Fidelity and level of detail of objects and environment. See also: resolution. [DMSO]

Graphical Model. A symbolic model whose properties are expressed in diagrams; for example, a decision tree used to express a complex procedure. Contrast with: mathematical model; narrative model; software model; tabular model. [DIS; IEEE]

Guise. A function that provides the capability for an entity to be viewed with one appearance by one group of participants, and with another appearance by another group. [DIS; MSETT]

Ground Truth. The actual facts of a situation, without errors introduced by sensors or human perception and judgment. [DIS]

Hanging Entity. An independent entity which is not connected to any other entity in the model. [JDBE]

Haptic. Refers to all the physical sensors that provide a sense of touch at the skin level and force feedback information from muscles and joints. [DSMC 2]

Haptics. The design of clothing or exoskeletons that not only sense motions of body parts (e.g., fingers) but also provide tactile and force feedback for haptic perception of a virtual world. [DMSO]

Heterogeneity. Diversity of objects and environments. [DMSO]

Heterogeneous Network. A collection of simulations with partially consistent behaviors and/or partially correlated data bases. Examples include simulators of different fidelity, mixed virtual and live simulations, and mixes of virtual and constructive simulations. [DIS]

Heuristic. Relating to or using a problem-solving technique in which the most appropriate solution of several found by alternative methods is selected at successive stages of a program for use in the next step of the program. [DMSO]

Hierarchical Model. A model of information in which data are represented as trees of records connected by pointers. [JDBE]

Hierarchy. Hierarchy is a ranking or ordering of abstractions. [DMSO 93 SAFOR Survey]

High Level Architecture (HLA). Major functional elements, interfaces, and design rules, pertaining as feasible to all DoD simulation applications, and providing a common framework within which specific system architectures can be defined. [DMSO]

Higher Order Model (HOM). A computer model representing combat elements, their functions and/or the terrain they operate on in an aggregated manner. A HOM may represent a battalion as a specific entity which is a conglomeration or averaging of the characteristics of its real-world components. "Higher Order" generally refers to echelons battalion and above with greater than 100m resolution, e.g. 3km, and with faster than real-time performance (e.g., days compressed into minutes, hours into

seconds). See: model order. See also: war game. [DIS; MSETT]
Homogeneous Network. A network of Distributed Interactive Simulation (DIS) objects with fully consistent behaviors and fully correlated data bases. [DIS]

Host or Host Computer. A computer that supports one or more simulation applications. All host computers participating in a simulation exercise are connected by network(s) including wide area networks, local area networks, and RF links. [DIS; IEEE]

Human Factors. A body of scientific facts about human characteristics. The term covers all biomedical and psychological considerations; it includes, but is not limited to, principles and applications in the areas of human engineering, personnel selection, training, life support, job performance aids, and human performance evaluation. [DoDI 5000.2]

Human-in-the-Loop (HITL). See: interactive model. [DIS]

Human-Machine Simulation. A simulation carried out by both human participants and computers, typically with the human participants asked to make decisions and a computer performing processing based on those decisions. [DIS]

Hybrid Simulation. A simulation that combines constructive, live, and/or virtual simulations, typically in a distributed environment. Such typically simulations combine simulators with actual operational equipment, prototypes of future systems, and realistic representations of operational environments. [MSETT]

Iconic Model. A physical model or graphical display that looks like the system being modeled; for example, a non-functional replica of a computer tape drive used for display purposes. See also: scale model. [DIS; IEEE]

Identity Simulation. A simulation in which the roles of the participants are investigated or defined; for example, a simulation that identifies aircraft based on their physical profiles, speed, altitude, and acoustic characteristics. [DIS]

Implementation. The means by which a synthetic environment, or portions of a synthetic environment, is realized. [DIS]

In-Basket Simulation. A simulation in which a set of issues is presented to a participant in the form of documents on which action must be taken; for example, a simulation of an unfolding international crisis as a sequence of memos describing relevant events and outcomes of the participant's actions on previous memos. [DIS; IEEE]

Independent Variable. A variable whose value is not dependent on the values of other variables. Contrast with: dependent variable. [IEEE; DIS]

Independent Verification and Validation (IV&V). The conduct of verification and validation of a model or simulation by individuals or agencies that did not develop the model or simulation. [DIS]

Information. Any communication or reception of knowledge such as facts, data, or opinions, including numerical, graphic, or narrative forms, whether oral or maintained in any medium, including computerized databases, paper, microform, or magnetic tape. [DoD 8320.1-M; DoDD 8000.1; DoD 8320.1-M-1; DoD 8320.1-M-X]

Information Architecture. A framework that portrays relationships among all data and activity components identified in models. It is an abstraction based on the products of the highest level of modeling and is further refined based on the next successive levels of modeling as each area of those detailed levels are completed. [DoD 8320.1-M]

Information Engineering. A disciplined methodology which creates an organization-wide architectural framework for application and

database development. [DoD 8320.1-M-X]

Information Management (IM). The creation, use, sharing, and disposition of data or information as corporate resources critical to the effective and efficient operation of functional activities consistent with IM guidance issued by the Office of the Secretary of Defense. IM includes the structuring of functional management improvement processes by the OSD principal Staff Assistants to produce and control the use of data and information in functional activities; information resources management; and supporting information technology (IT) and information services. [CJVSI 8510.01]

Information Model. A model that represents the processes, entities, information flows, and elements of an organization and all relationships between these factors. [DoD 8320.1-M-X]

Information Resource Dictionary System (IRDS). A set of standard specifications for a data dictionary system resulting from U.S. Federal and national standards efforts; a computer system conforming to those standards that provides facilities for recording, storing, and processing descriptions of an organization's significant information and information processing resources. [DoDD 8320.1]

Information System (IS). The organized collection, processing, maintenance, transmission, and dissemination of information in accordance with defined procedures, whether automated or manual. [DoDD 5200.28; DoD 8320.1-M; DoD 8320.1-M-1;]

Infrastructure. See: M&S infrastructure.

Initial Condition. The values assumed by the variables in a system, model, or simulation at the beginning of some specified duration of time. Contrast with: boundary condition; final condition. [DIS]

Initial State. The values assumed by the state variables of a system, component, or simulation at the beginning of some specified duration of time. Contrast with: final state. [DIS]

Instantiation. To represent an abstraction by a concrete instance. [DMSO]

Instructional Simulation. A simulation intended to provide a

simulation equivalent of a real or hypothesized stimulus that could occur in the synthetic environment for the purpose of training. [DIS]

Integrated Product and Process Development (IPPD). IPPD is an approach to systems acquisition which brings together all of the functional disciplines required to develop, design, test, produce and field a system. This is essentially the same as Concurrent Engineering. [DSMC 1]

Integrated Product Team (IPT). Integrated Product Teams are a means to achieve concurrent engineering or IPPD. They are multi-disciplinary teams consisting of representatives from all disciplines involved in the system acquisition process, from requirements development through disposal. Having the participation of all the appropriate disciplines, IPTs are often empowered to make decisions to achieve successful development of their particular product. [DSMC 1]

Intelligence Community Coordinating Group (ICCOG). The ICCOG serves as the intelligence community's forum for M&S exchange, fostering improved communication among community and other government agencies and industry. The ICCOG promotes sharing programs, methodologies, tools, techniques, data and other information. [DOD 5000.59-P]

Intelligent Forces (IFOR). A specific program funded by ARPA to build a maximum of intelligence into the computer representations of forces. [DOD 5000.59-P]

Interaction. The explicit action taken by one object toward another object or geographical area. [DMSO]

Interactive Model. A model that requires human participation. Syn: human-in-the-loop. [DIS]

Internal Schema. An internal schema describes data as it is physically stored and includes all aspects of the environment in which a database is to reside. [DoD 8320.1-M; FIPS Pub 11-3]

Internal Variable. See: endogenous variable. [DIS]

Interoperability. See: M&S Interoperability. [DOD 5000.59-P]

Interval-Oriented Simulation. A continuous simulation in which simulated time is advanced in increments of a size suitable to make implementation possible on a digital system. [DIS; IEEE]

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Glossary - J

Joint M&S. Representations of joint and Service forces, capabilities, equipment, materiel, and services used by the Joint community or by two, or more, Military Services.[DoDD 5000.59;]

JM&S Proponent. The Joint Component responsible for life cycle management of a JM&S application or data base. [CJVSI 8510.01]

Joint Modeling and Simulation Executive Panel (JMSEP). An organization responsible for providing advice and assistance on Joint Modeling and Simulation issues. The Joint Components provide representatives. Membership is at the 0-6 level or higher. The Deputy Director for Wargaming, Simulation, and Operations (DDWSO), J-8, serves as the chair. [CJVSI 8510.01]

Joint Modeling and Simulation Investment Plan. A Joint Components plan, published under the authority of the Chairman of the Joint Chiefs of Staff and with the coordination of the Joint Components, that establishes short-term (present to 6 years) and long-term (beyond 6 years) programs and funding for joint and common use JM&S to achieve the specified goals and objectives outlined in the JM&S Master Plan. [CJVSI 8510.01]

Joint Program. Any Defense acquisition system, subsystem, component, or technology program that involves formal management or funding by more than one DoD Component during any phase of a system’s life-cycle. [DoDI 5000.2]

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Glossary - K

Knowledge. The rules, environment, etc. which form the structure humans use to process and relate to information, or the information a computer system must have to behave in an apparently intelligent manner. [DMSO]

Knowledge-Based System. A system in which the domain knowledge is explicit and separate from the system's operational instructions/ information. [DMSO]

Known Object. An object is known to a simulation if the simulation is reflecting or updating any attributes of that object. [DMSO]

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Glossary - L

Laboratory Simulation. A simulation developed and used under highly controlled conditions; for example, a simulation of a medical technique implemented in the controlled environment of a laboratory. [DIS; IEEE]

Lag Variable. (1) In a discrete simulation, a variable that is an output of one period and an input for some future period. (2) In an analog simulation, a variable that is a function of an output variable and that is used as input to the simulation to provide a time delay response or feedback. Syn: lagged variable. [DIS; IEEE]

Latency. The time required for a device to begin physical output of a desired piece of data once processing is complete. [DMSO]

Lead Variable. (l) In a discrete simulation, a variable that is an output of one period and that predicts what the output of some future period will be. (2) In an analog simulation, a variable that is a function of an output variable and that is used as input to the simulation to provide advanced time response or feedback. [DIS]

Legacy Model. A model developed in the past which is still in use that was not implemented using today's standards (e.g., software, communication, DIS, ALSP, etc.). Some legacy models have been modified with interfaces to some of the current standards extending their usefulness and interoperability with newer, standards based models. [AFI 16-102; DSMC 1]

Live Entity. A perceptible object that can appear in the virtual battlespace but is unaware and non-responsive (either by intent, lack of capability or circumstance) to the actions of virtual entities. See also: field instrumentation. Contrast with: live instrumented entity. [DIS]

Live Simulation. See Live, Virtual, and Constructive Simulation. [DOD 5000.59-P]

Live, Virtual, and Constructive Simulation. The categorization of simulation into live, virtual, and constructive is problematic, because there is no clear division between these categories. The degree of human participation in the simulation is infinitely variable, as is the degree of equipment realism. This categorization of simulations also suffers by excluding a category for simulated people working real equipment (e.g., smart vehicles). [DOD 5000.59-P]

a. Live Simulation. A simulation involving real people operating real systems. [DOD 5000.59-P]

b. Virtual Simulation. A simulation involving real people operating simulated systems. Virtual simulations inject human-in-the-loop (HITL) in a central role by exercising motor control skills (e.g., flying an airplane), decision skills (e.g., committing fire control resources to action), or communication skills (e.g., as members of a C4I team).[DOD 5000.59-P]

c. Constructive Model or Simulation. Models and simulations that involve simulated people operating simulated systems. Real people stimulate (make inputs) to such simulations, but are not involved in determining the outcomes. [DOD 5000.59-P]

Local Area Network. A class of data network which provides high data rate interconnection between network nodes in close physical proximity. [USMC Mstr Plan]

Logical Data Model. A model of the data stores and flows of the organization derived from the conceptual business model. [DoD 8320.1-M-1; DoD 8320.1-M-X]

Logical Verification. The identification of a set of assumptions and interactions for which the M&S correctly produces intended results. It determines the appropriateness of the M&S for a particular application and to ensure that all assumptions and algorithms are consistent with the conceptual M&S. [DA PAM 5-11]

Long-Haul Network (LHN). See: wide area network. [DIS]

Glossary - M

Machine Simulation. A simulation that is executed on a machine. See also: computer simulation. [DIS; IEEE]

Management Game. A simulation game in which participants seek to achieve a specified management objective given pre-established resources and constraints; for example, a simulation in which participants make decisions designed to maximize profit in a given business situation and a computer determines the results of those decisions. See also: war game. [DIS; IEEE]

Manned Platform Entity. Corresponds to current or proposed battlefield entities which are driven, guided, flown, or otherwise have a warfighter, staff, or crew in the loop. This includes command posts and other command, control, communication, and intelligence (C3I) nodes and may include role players representing other battlefield entities or staff functions. [DIS]

Markov Chain. A discrete Markov process. [IEEE]

Markov Chain Model. A discrete, stochastic model in which the probability that the model is in a given state at a certain time depends only on the value of the immediately preceding state. Syn: Markov model. See also: semi-Markov model. [IEEE; DIS]

Markov Process. A stochastic process which assumes that in a series of random events, the probability for occurrence of each event depends only on the immediately preceding outcome. See also: semi-Markov process. [IEEE; DIS]

Mass Storage. Refers to any device that can store large amounts of data and retrieve it at some later time, even after system power-down. Mass storage devices are usually categorized in terms of being either on-line storage or off-line storage. [DMSO]

Mathematical Model. A symbolic model whose properties are expressed in mathematical symbols and relationships; for example, a model of a nation’s economy expressed as a set of equations. Contrast with: graphical model; narrative model; software model; tabular model. [DIS]

Measures of Effectiveness (MOE). A qualitative or quantitative

measure of a M&S's performance or a characteristic that indicates the degree to which it performs the task or meets a requirement under specified conditions. See also: measure of performance. [AFI 16-102]
Measures of Outcome (MOO). Metrics that define how operational requirements contribute to end results at higher levels, such as campaign or national strategic outcomes. [DSMC 1]

Measure of Performance (MOP). Measure of how the system/individual performs its functions in a given environment (e.g., number of targets detected, reaction time, number of targets nominated, susceptibility of deception, task completion time.) It is closely related to inherent parameters (physical and structural) but measures attributes of system behavior. See also: measure of effectiveness. [DIS; IEEE]

Mesometeorology. The study of atmospheric phenomena such as tornadoes and thunderstorms which occur between meteorological stations or beyond the range of normal observation from a single point; i.e., on a scale larger than that of micrometeorology, but smaller than the cyclonic (synoptic) scale. [DMSO]

Metadata. Information describing the characteristics of data; data or information about data; descriptive information about an organization’s data, data activities, systems, and holdings. [DoDD 8320.1; DoD 8320.1-M; DoD 8320.1-M-1; DoD 8320.1-M-X; NBS Special Pub 500-152]

Meta-Knowledge. (synonym with wisdom) Knowledge about knowledge. Knowledge about the use and control of domain knowledge in an expert or knowledge-based system. Knowledge about how the system operates or reasons. [DMSO]

Metamodel. A model of a model. Metamodels are abstractions of the M&S being developed which use functional decomposition to show relationships, paths of data and algorithms, ordering, and interactions between model components and subcomponents. Metamodels allow the software engineers who are developing the model to abstract details to a level that subject matter experts can validate. [MSETT]

Methodology. The system of principles, practices, and procedures, applied to a specific branch of knowledge. {DMSO}

Metric A measure of the extent or degree to which a product possesses and exhibits a certain quality, property, or attribute. [IEEE]

Metric(s). A process or algorithm that may involve statistical sampling, mathematical computations, and rule-based inferencing. Metrics provide the capability to detect and report defects within a sample. [DoD 8320.1-M-3]

Micrometeorology The study of variations in meteorological conditions over small areas, such as hillsides, forests, river basins, or individual cities. [DMSO]

Mission Space. The environment of entities, actions, and interactions comprising the set of interrelated processes used by individuals and organizations to accomplish assigned tasks. [DOD 5000.59-P]

Mock-Up. A full-sized structural, but not necessarily functional, model built accurately to scale, used chiefly for study, testing, or display. See also: physical model. [DIS; IEEE]

Model. A physical, mathematical, or otherwise logical representation of a system, entity, phenomenon, or process.[DoDD 5000.59; DIS; DODI 5000.XX; DOD 5000.59-P; JDL]

Modeling. Application of a standard, rigorous, structured methodology to create and validate a physical, mathematical, or otherwise logical representation of a system, entity, phenomenon, or process. [DoD 8320.1-M]

Modeling and Simulation (M&S). The use of models, including emulators, prototypes, simulators, and stimulators, either statically or over time, to develop data as a basis for making managerial or technical decisions. The terms "modeling" and "simulation" are often used interchangeably. [MSETT]

Modeling and Simulation (M&S) Accreditation. The official certification that a model or simulation is acceptable for use for a specific purpose. [DoDD 5000.59; DIS]

Modeling and Simulation (M&S) Application Sponsor. The organization that utilizes the results/product(s) from a specific application of an M&S. [DoDI 5000.XX]

Modeling and Simulation (M&S) Developer. The agency which actually develops an M&S or the agency that is overseeing the M&S development by a contractor or FFRDC. [Army Mstr Plan]

Modeling and Simulation (M&S) Executive Agent. See: DoD M&S Executive Agent. [DMSO]

M&S Infrastructure. An underlying base or foundation; the basic facilities, equipment, and installations needed for the functioning of a system. A M&S infrastructure would consist of M&S systems and applications, communications, networks, architectures, standards and protocols, information resged to enable them to operate effectively together. [DODD 5000.59; DoD 5000.59-P; DSMC 1]ource repositories, etc.[DOD 5000.59-P]

M&S Interoperability. The ability of a model or simulation to provide services to and accept services from other models and simulations, and to use the services so exchan

Modeling and Simulation (M&S) Investment Plan. A DoD plan, published under the authority of the USD(A&T) and with the coordination of the DoD Components, that establishes short-term (present to 6 years) and long-term (beyond 6 years) programs and funding for joint and common use M&S to achieve the specified goals and objectives outlined in the DoD M&S Master Plan.[DoDD 5000.59; DODI 5000.XX; DSMC 1]

Modeling and Simulation (M&S) Master Plan. A DoD plan, published under the authority of the USD(A&T) and with the coordination of the DoD Components, that establishes short-term (present to 6 years) and long-term (beyond 6 years) DoD goals and objectives for the application of M&S for joint and common use within the Department of Defense. It shall also include an assessment of current M&S capabilities, a status report on M&S efforts under development, and a road map that delineates the management, investment, and technical strategies required to achieve DoD M&S objectives.[DoDD 5000.59]

Modeling and Simulation (M&S) Resource Repository (MSRR). A physical location or site that contains unclassified, classified, or both classified and unclassified M&S data and/or information. A MSRR may or may not be part of the DoD MSIS. [DoDI 5000.XX]

M&S Working Group (MSWG). The MSWG supports the activities of the EXCIMS and responds to guidance and direction from the USD (A&T). The Director, DMSO, chairs the MSWG. The membership of the MSWG will normally be 0-6 military officers or GM-15 grade civilians. The MSWG promotes coordination and cooperation of DoD M&S at the working level. Members will represent their organization, serve as the DMSO point of contact for M&S issues, and prepare their principals for EXCIMS meetings. MSWG membership will mirror the organizational makeup of the EXCIMS; however, other organizations may be added by majority vote of the group, as required. [DOD 5000.59-P]

Models and Simulations: Army Integrated Catalog (MOSAIC). An Army on-line hypertext tool available to all developers and users to peruse the array of existing M&S and query the hypertext system for all information of interest to them in their proposed application. [DMSO]

Model-Test-Model. An integrated approach to using models and simulations in support of pre-test analysis and planning; conducting the actual test and collecting data; and post-test analysis of test results along with further validation of the models using the test data. [DSMC 1]

Modifier. A word which helps define and render a name unique within the database, which is not the prime or class word. [DoD 8320.1-M-1; NBS Special Pub 500-149]

ModSAF. Modular Semi-Automated Forces are a class of CGF utilizing a modular software structure in which model components have well-defined and documented interfaces allowing run-time reconfiguration of model behavior to develop generalized, and more sophisticated, representations of reactive behaviors and missions. ModSAF provides an open architecture that is expected to be the starting point for future extensions of SAFOR capabilities. [DOD 5000.59-P]

Monte Carlo Algorithm. A statistical procedure that determines the occurrence of probabilistic events or values of probabilistic variables for deterministic models, i.e., make a random draw.

[DSMC]

Monte Carlo Method. In modeling and simulation, any method that employs Monte Carlo simulation to determine estimates for unknown values in a deterministic problem. [IEEE; DIS]

Monte Carlo Simulation. A simulation in which random statistical sampling techniques are employed such that the result determines estimates for unknown values. [DIS]

Multicast. A transmission mode in which a single message is sent to selected multiple (but not necessarily all) network destinations, i.e., one-to-many. Contrast with: broadcast, unicast. [DIS; IEEE}

Multisensory I/O. The use of more than one sensory mechanism (visual, aural, tactile, etc.) to interact with a computer-generated environment. [DSMC 2]

Multi-State Objects. Mission space entities that express a changing state (in attribution and visual display) as the simulation progresses (e.g., damage to structures, changes in vegetation, damage system representations such as vehicles, tanks, etc). [DOD 5000.59-P]

Glossary - N

Narrative Model. A symbolic model the properties of which are expressed in words; for example, a written specification for a computer system. Syn: verbal descriptive model. Contrast with: graphical model; mathematical model; software model; tabular model. [DIS; IEEE]

Natural Model. A model that represents a system by another system that already exists in the real world; for example, a model that uses one body of water to represent another. [DIS; IEEE]

Network Byte Order. The Internet-standard ordering of the bytes corresponding to numeric values. [MSETT]

Network Communication Services. The capability provided to electronically transmit modeling and simulation data between networked computational nodes in a manner which meets requirements for transmission latency, multi-cast addressing and security needed to support the creation and operation of distributed time and space coherent synthetic environments. [Army Mstr Plan]

Network Filter. A system to selectively accept or reject data received from the network. [DIS]

Network Management. The collection of administrative structures, policies, and procedures that collectively provide for the management of the organization and operation of the network as a whole. See: network manager. [DIS; IEEE]

Network Manager. The person or organization responsible for maintaining, monitoring and scheduling the operation of the portion of a network used for a distributed simulation and whose responsibilities for the network terminates at the gateways and who is not responsible for the simulation hosts or a local area network. Normally, also in charge of the gateway and not part of the user organization. See: network management. [DIS]

Network Node. A specific network address. See: node. Contrast with: processing node. [DIS]

Network Scheduler. The person responsible for scheduling all use of the Distributed Interactive Simulation (DIS) network. This

includes use for video tele-conferencing and simulation. [Navy]

Network Theory. The study of networks used to model processes such as communications, computer performance, routing problems, and project management. [DIS; IEEE]

Node. A general term denoting either a switching element in a network or a host computer attached to a network. See: processing node; network node. [DIS; IEEE]

Non-Absorbing State. In a Markov chain model, a state that can be left once it is entered. [IEEE; DIS]

Non-Standard Cell. A cell which is not compliant with the DIS message and data base standards. Non-standard cells require a Cell Adapter Unit in order to join a DIS exercise. [DIS; MSETT]

Non-Standard Data Element. Any data element that exists in a system or application program and does not conform to the conventions, procedures, or guidelines established by the organization. [DoD 8320.1-M-1; DoD 8320.1-M-X]

Normative Model. A model that makes use of a familiar situation to represent a less familiar one; for example, a model that depicts the human cardiovascular system by using a mechanical pump, rubber hoses, and water. [DIS; IEEE]

Notional Data. Speculative or theoretical data rather than actual data. [DMSO]

Numerical Model. (l) A mathematical model in which a set of mathematical operations is reduced to a form suitable for solution by simpler methods such as numerical analysis or automation; for example, a model in which a single equation representing a nation’s economy is replaced by a large set of simple averages based on empirical observations of inflation rate, unemployment rate, gross national product, and other indicators. (2) A model whose properties are expressed by numbers. [DIS; IEEE]

Glossary - O

Object. A fundamental element of a conceptual representation that reflects the real world at levels of abstraction and resolution appropriate for a simulation. For any given value of time, the state of an object is defined as the enumeration of all its attribute values. [DMSO]

Object-Based. A software design methodology adhering to only some of the properties of object oriented software; for example, Ada does not support inheritance, a key property of object oriented systems, therefore Ada is often referred to as an object based language. See: object oriented. [DMSO]

Object-Oriented. A software design methodology that when applied to DIS results in the battlefield being represented by objects, where objects encapsulate the methods or procedures associated with the object and where objects communicate with other objects by message passing. Examples of battlefield objects are platoons (unit level), tanks (platform level), main guns (component or module level), and gun barrels (part level). One of the main benefits of an object oriented approach is the inherent modularity; e.g., to change a tank model only the tank object must be changed. See also: object based. [DIS]

Object-Oriented Language. A language which best suits an object-oriented decomposition of software and which provides the capability to implement classes and objects. Directly supports data abstraction and classes, and provides additional support for inheritance as a means of expressing hierarchies of classes.[DSMC]

Object-Oriented Programming. Use of a programming system that results in programs organized as cooperative collections of objects, each of which represents an instance of some class, and whose classes are members of class hierarchies as defined by the inheritance mechanism. [DMSO 93 SAFOR Survey]

Occlusion. The vision effect of closer objects overlapping or occluding more distant ones, providing visual clues to judge how close objects are from the viewer. Slight head motions provide more information about occlusions. [DSMC 2]

Octet. A sequence of eight bits, usually operated upon as a

unit. [IEEE 1278.1]

Office of the Secretary of Defense (OSD). Includes the immediate Offices of the Secretary and Deputy Secretary of Defense, the Under Secretaries of Defense, the Director of Defense Research and Engineering, the Assistant Secretaries of Defense (ASDs), the General Counsel of the Department of Defense (GC, DoD), the Assistants to the Secretary of Defense (ATSDs), the OSD Directors, or equivalents, who report directly to the Secretary or the Deputy Secretary of Defense, and such other staff offices as the Secretary of Defense establishes to assist in carrying out assigned responsibilities. [DoDD 5000.59; DoDI 5000.XX]

Off-Line Storage Devices. Off-line storage devices generally are used for data backup and archival applications, using media like magnetic tapes or removable hard or floppy disks. [DMSO]

On-Line Storage Devices. On-line storage devices provide more immediate retrieval of data and usually refer to devices such as magnetic or optical hard disk drives. [DMSO]

Open System. A system in which the components and their composition are specified in a non-proprietary environment, enabling competing organizations to use these standard components to build competitive systems. There are three perspectives on open systems: portability - the degree to which a system component can be used in various environments, interoperability - the ability of individual components to exchange information, and integration - the consistency of the various human-machine interfaces between an individual and all hardware and software in the system. [AFI 16-102; DSMC 1]

Open Systems Environment. A Distributed Interactive Simulation (DIS) environment having attributes of interoperability and portability which promotes competition by allowing systems developed by multiple vendors and nations to interoperate through a common set of computer and communications protocols. Syn: Open Systems Interconnection (OSI). [DIS]

Open Systems Interconnection (OSI). Syn: open systems environment.

Operational Environment. A composite of the conditions, circumstances, and influences which affect the employment of military forces and the decisions of the unit commander.

Frequently characterized as permissive, semi-permissive, or non-permissive. [DIS]

Orthogonal. Pertaining to or composed of right angles. [DMSO]

Outcome-Oriented Simulation. A simulation in which the end result is considered more important than the process by which it is obtained; for example, a simulation of a radar system that uses methods far different from those used by the actual radar, but whose output is the same. Contrast with: process-oriented simulation. [DIS; IEEE]

Output Validation. The process of determining the extent to which the output (outcome distributions for the M&S and/or sub-models) represent the significant and salient features of distributions or real world systems, events, and scenarios. [DA PAM 5-11]

Owned Attribute. An object attribute that is explicitly modeled by the owning simulation. A simulation that owns an attribute has the unique responsibility to provide values for that attribute to the federation, through the Runtime Infrastructure (RTI), as they are produced. [DMSO]

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Glossary - P

Parallax. The vision effect of having two eyes viewing the same scene from slightly different positions which creates a sense of depth. Computer-generated environments, one for each eye, artificially create the parallax effect. [DSMC 2]

Parallel Processing. Multiple processes running on multiple processors simultaneously. [DSMC 1]

Parametric Model. A model using parametric equations that may be based on numerical model outputs or fits to semi-empirical data to succinctly describe a particular process, feature, or effect. [DMSO]

Period. The time interval between successive events in a discrete simulation. [IEEE; DIS]

Petri Net. An abstract, formal model of information flow, showing static and dynamic properties of a system, i.e., the petri net is defined by its places, transitions, input function, and output function. [DIS; IEEE]

Physical Data Model. A representation of the technologically independent information requirements in a physical environment of hardware, software, and network configurations representing them in the constraints of an existing physical environment.[DoD 8320.1-M; FIPS Pub 11-3]

Physical Model. A model whose physical characteristics resemble the physical characteristics of the system being modeled; for example, a plastic or wooden replica of an airplane. A mock-up. See also iconic model; scale model. Contrast with: symbolic model. [DIS; IEEE]

Pixel. A “picture element,” refers to the smallest visual unit in an image on a computer display. [DSMC 2]

Plan View Display. A symbolic representation of a Distributed Interactive Simulation (DIS) exercise in which the observer’s eyepoint is above the exercise. [DIS]

Platform. A generic term used to describe a level of representation equating to vehicles, aircraft, missiles, ships, fixed sites, etc. in the hierarchy of representation possibilities. Other representation levels include units (made up of platforms) and components or modules (which make up platforms). [DIS; MSETT]

Polygon. A flat plane figure with multiple sides, the basic building block of virtual worlds. The more polygons a computer can display and manipulate per second, the more realistic the virtual world will appear. Humans perceive the equivalent of 80 million polygons at more than 30 frames per second in normal vision. [DSMC 2]

Predictive Model. A model in which the values of future states can be predicted or are hypothesized; for example, a model that predicts weather patterns based on the current value of temperature, humidity, wind speed, and so on at various locations. [DIS; IEEE]

Prescriptive Model. A model used to convey the required behavior or properties of a proposed system; for example, a scale model or written specification used to convey to a computer supplier the physical and performance characteristics of a required computer. Contrast with: descriptive model. [DIS; IEEE]

Primary Key. Property or characteristic that uniquely identifies the class of information stored about an entity. Primary keys are determinants or identifiers. Primary keys are never null; each entity or entity class has one and only one primary key. [DoD 8320.1-M-X]

Prime Word. A word included in the name of a data entity which represents the logical data grouping (in the logical data model) to which it belongs. [DoD 8320.1-M-1; DoD 8320.1-M-X; NBS Special Pub 500-149]

Principal Staff Assistants. The Under Secretaries of Defense; the Assistant Secretaries of Defense (ASDs); the General Council of the Department of Defense (GC, DoD); the Assistants to the Secretary of defense (ATSDs); and the OSD Directors, or equivalents, who report directly to the Secretary or Deputy Secretary of Defense. [DoDI 5000.XX]

Probabilistic Model. See: stochastic model. [DIS]

Processes. Processes affect entities. Attrition, communications, and movement are examples of processes. Processes have a level of detail by which they are described. [MORS SIMTAX]

Process Improvement Modeling. Defines and documents the current ("as is") and desired future ("to be") processes and information requirements of a functional activity. Two types of process improvement models are: [DoD 8320.1-M-X; DRAFT DoDI 8020.1]

a. Activity Models. Models of the processes that make up the functional activity showing inputs, outputs, controls, and mechanisms through which the processes of the functional activity are (or will be) conducted. [DoD 8320.1-M]

b. Data Model. In a database, the user's logical view of the data in contrast to the physically stored data, or storage structure. A description of the organization of data in a manner that reflects the information structure of an enterprise. [DoD 8320.1-M; DoD 8320.1-M-1; FIPS Pub 11-3]

Process Model. A model of the processes performed by a system; for example, a model that represents the software development process as a sequence of phases. Contrast with: structural model. [DIS]

Process-Oriented Simulation. A simulation in which the process is considered more important than the outcome; for example, a model of a radar system in which the objective is to replicate exactly the radar's operation, and duplication of its results is a lesser concern. Contrast with: outcome-oriented simulation. [DIS; IEEE]

Processing Node. The hardware and software processing resources devoted to one or more simulation entities. See: node. Contrast with: network node. [DIS]

Protocol. A set of rules and formats (semantic and syntactic) that define the communication behavior of simulation applications. [DOD 5000.59-P; DIS; IEEE]

Protocol Data Unit (PDU). DIS terminology for a unit of data that

is passed on a network between simulation applications. [DoD 5000.59-P]

Protocol Data Unit (PDU) Standards. Formally defined data exchange standards established for each of the several primary classes of functionality which is represented in the DIS synthetic environment, e.g., movement, weapons, firing effects, collisions, etc. [Army Mstr Plan]

Protocol Entity. An object that exchanges information with other protocol entities in a network via Protocol Data Units (PDUs) in accordance with an established protocol. A key attribute of a protocol entity is its state. State transitions occur in a given protocol entity in accordance with the established protocol as the result of: (a) PDUs received from other protocol entities, and (b) occurrence of an external event (e.g., expiration of a time-out counter.) See also: Protocol Data Unit. [DIS]

Protocol Suite. A defined set of complementary protocols within the communication architecture profile. [MSETT]

Prototype. A preliminary type, form, or instance of a system that serves as a model for later stages or for the final, complete version of the system. [IEEE; DIS]

Pseudocode. A description of control and/or data structures in a natural language with no rigid rules of syntax. [DA PAM 5-11]

Public Attribute. A public attribute is one that is observable and of interest to more than one actor. These attributes are specified in the ALSP protocol and are broadcast by the modeling actor whenever the value of the attribute changes. For example, location is an attribute of an aircraft that all actors are interested in. The owning actor would broadcast this attribute whenever it changed. [ALSP]

Glossary - Q

Qualitative Data. A data value that is a non-numeric description of a person, place, thing, event, activity, or concept. [DoD 8320.1-M-1]

Quality Assurance (QA). The policies, procedures and systematic actions established in an enterprise for the purpose of providing and maintaining some degree of confidence in data integrity and accuracy throughout the life cycle of the data. The planned systematic activities necessary to ensure that a component, module, or system conforms to established technical requirements. [FIPS Pub 11-3]

Quantitative Data. Numerical expressions that use Arabic numbers, upon which mathematical operations can be performed. [DoD 8320.1-M-1]

Queue. In queuing theory, a set of zero or more entities waiting to be serviced by a service facility. [DIS; IEEE]

Queuing Model. A model consisting of service facilities and entities waiting in queues to be served; for example, a model depicting teller windows and customers at a bank. [DIS; IEEE]

Queuing Network Model. A model in which a process is described as a network in which each node represents a service facility rendering a given type of service and a queue for holding entities waiting to be served; for example, a model depicting a network of shipping routes and docking facilities at which ships must form queues in order to unload their cargo. [DIS; IEEE]

Queuing Theory. The study of queues and the performance of systems that service entities that are organized into queues. See also: queuing model; queuing network model. [DIS; IEEE]

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Glossary - R

Random. Pertaining to a process or variable whose outcome or value depends on chance or on a process that simulates chance, often with the implication that all possible outcomes or values have an equal probability of occurrence; for example, the outcome of flipping a coin or executing a computer-programmed random number generator. [DIS; IEEE]

Real Battlefield. See: real world. [DIS]

Real-Time. In modeling and simulation, simulated time advances at the same rate as actual time; for example, running the simulation for one second results in the model advancing time by one second. Contrast with: fast time; slow time. [DIS]

Real-Time Service. A service which satisfies timing constraints imposed by the service user. The timing constraints are user specific and should be such that the user will not be adversely affected by delays within the constraints. [MSETT]

Real-Time System. A system that computes its results as quickly as they are needed by a real-world system. Such a system responds quickly enough that there is no perceptible delay to the human observer. In general use, the term is often perverted to mean within the patience and tolerance of a human user. [AFI 16-102]

Real-World. The set of real or hypothetical causes and effects that simulation technology attempts to replicate. When used in a military context, the term is synonymous with real battlefield to include air, land, and sea combat. Syn: real battlefield. [DIS]

Real-World Time. The actual time in Greenwich, England. Syn: sidereal time. [DIS; IEEE]

Reality Engine. Any computer system specifically designed to generate virtual images on a display device. [DSMC 2]

Reference Version. The most recent version of a model or simulation which has been released by, and under configuration management of an approving authority. [DIS]

Reflected Attribute. An object attribute that is represented but

not explicitly modeled in a simulation. The reflecting simulation accepts new values of the reflected attribute as they are produced by some other federation member and provided to it by the Runtime Infrastructure (RTI). [DMSO]
Reflected Object. An object that is represented but not explicitly modeled in a simulation. The reflecting simulation accepts changes in state of the reflected object as they are produced by some other federation member and provided to it by the Runtime Infrastructure (RTI). [DMSO]

Regime. The interaction domain of entities. Platform level entities in DIS interact in real time; these are the primary entities of interest in DIS. However, DIS is expected to increase its domain to encompass the regimes of aggregated models or higher order models (HOMs) (which run much faster than real-time) and to components or modules (which in general run much slower than real-time). [MSETT]

Relational Model. A model of information in which data are represented as tables, with records stored as rows of the table and data elements stored as columns of each row. [JDBE]

Reliability Model. A model used to estimate, measure, or predict the reliability of a system; for example, a model of a computer system, used to estimate the total down time that will be experienced. [DIS; IEEE]

Reliable Service. A communication service in which the received data is guaranteed to be exactly as transmitted.[DIS; IEEE; MSETT]

Remote Entity Approximation (REA). The process of extrapolating and interpolating any state of an entity based on its last known state. This includes dead reckoning and smoothing. Syn: dead reckoning. [DIS]

Research, Development, and Acquisition (RDA). RDA includes all M&S used for design, development, and acquisition of weapons systems and equipment. M&S in the RDA domain are used for scientific inquiry to discover or revise facts and theories of phenomena, followed by transformation of these discoveries into physical representations. RDA also includes test and evaluation (T&E) where M&S are used to augment and possibly reduce the scope of real-world T&E. [Army]

Resolution. The degree of detail and precision used in the representation of real world aspects in a model or simulation. See also: granularity. [DoD 5000.59-P; DA PAM 5-11; DSMC 1]

Right-Hand Rule. Positive rotation is clockwise when viewed toward the positive direction along the axis of rotation. [DIS; IEEE; MSETT]

Scalability. The ability of a distributed simulation to maintain time and spatial consistency as the number of entities and accompanying interactions increase. [DOD 5000.59-P]

Scale Model. A physical model that resembles a given system, with only a change in scale; for example, a replica of an airplane one tenth the size of the actual airplane. [DIS; IEEE]

Scenario. (1) Description of an exercise ("initial conditions" in military terms). It is part of the session database which configures the units and platforms and places them in specific locations with specific missions. (2) An initial set of conditions and time line of significant events imposed on trainees or systems to achieve exercise objectives. See: field exercise. [DIS; IEEE]

Schema. Descriptive representation of data and/or data requirements that describe conceptual, internal, or external views of information/data needs. [DoD 8320.1-M-X]

Scope. Used in reference to SAFOR scope refers to the aspects of combat portrayed by the system. For example, ground combat, combat support, combat service support, air-to-air combat, air-to-ground combat, air-to-ship combat, naval surface combat, naval undersea warfare, deployment. [DMSO 93 SAFOR Survey]

Seamless. Perfectly consistent. Transparent. [DMSO]

Segment. A portion of a session that is contiguous in simulation time and in wall-clock time (sidereal time). [DIS; IEEE]

Selector. A portion of an address identifying a particular entity at an address (e.g., a session selector identifies a user of the session service residing at a particular session address). [MSETT]

Semi-Automated Forces (SAFOR). See: Computer Generated Forces.

Semi-Markov Model. A Markov chain model in which the length of time spent in each state is randomly distributed. [DIS; IEEE]

Semi-Markov Process. A Markov process in which the duration of each event is randomly distributed. [DIS; IEEE]

Serially-Correlated Variable. See: lag variable. [DIS]

Session. A portion of an exercise that is contiguous in wall-clock (sidereal) time and that is initialized per an exercise database. [DIS; IEEE]

Shutter Glasses. Stereoscopic viewing eyeglasses that alternately reveal an image to the left and right eye to create the parallax effect giving a sense of depth (each eye receives a slightly different image). The shutters are typically composed of electrically switched LCD or Polaroid material and have no moving parts. [DSMC 2]

Sidereal Time. Time measured with respect to the stars. Time that is independent of simulation clocks, time zones, or measurement errors. The "Ground Truth" of time measurement. See also: Real World Time. [DIS]

Simuland. The system being simulated by a simulation. [DIS]

Simulate. To represent a system by a model that behaves or operates like the system. See also: emulate. [DIS]

Simulated Time. Time as represented within a simulation. Syn: virtual time. See also: fast time; real time; slow time. [IEEE]

Simulation. A method for implementing a model over time. [DOD 5000.59-P; DoDD 5000.59]

Simulation Application. (1) The executing software on a host computer that models all or part of the representation of one or more simulation entities. The simulation application represents or "simulates" real-world phenomena for the purpose of training or experimentation. Examples include manned vehicle (virtual) simulators, computer generated forces (constructive), environment simulators, and computer interfaces between a Distributed Interactive Simulation (DIS) network and real (live) equipment. The simulation application receives and processes information concerning entities created by peer simulation applications through the exchange of DIS PDUs. More than one simulation application may simultaneously execute on a host computer. (2) The application layer protocol entity that implements standard DIS protocol. Syn: simulation. [DIS; IEEE]

Simulation Clock. A counter used to accumulate simulated time.

[DIS; IEEE]

Simulation Entity. An element of the synthetic environment that is created and controlled by a simulation application through the exchange of Distributed Interactive Simulation (DIS) Protocol Data Units (PDUs) (e.g., tanks, submarines, carriers, fighter aircraft, missiles, bridges). It is possible that a simulation application may be controlling more than one simulation entity. [DIS; IEEE]
Simulation Environment. (1) Consists of the operational environment surrounding the simulation entities including terrain, atmospheric, bathospheric and cultural information. (2) All the conditions, circumstances, and influences surrounding and affecting simulation entities including those stated in (1). [DIS]

Simulation Exercise. An exercise that consists of one or more interacting simulation applications. Simulations participating in the same simulation exercise share a common identifying number called the exercise identifier. These simulations also utilize correlated representations of the synthetic environment in which they operate. See: live simulation. [DIS; IEEE]

Simulation Fidelity. Refers to the degree of similarity between the training situation and the operational situation that is being simulated. [DIS; MSETT]

Simulation Game. A simulation in which the participants seek to achieve some agreed-upon objective within an established set of rules. For example, a management game, a war game. Note: The objective may not be to compete, but to evaluate the participants, increase their knowledge concerning the simulated scenario, or achieve other goals. Syn: gaming simulation. [DIS; IEEE]

Simulation Language. A programming language used to implement simulations. [IEEE; DIS]

Simulation Management. A mechanism that provides centralized control of the simulation exercise. Functions of simulation management include: start, restart, maintenance, shutdown of the exercise, and collection and distribution of certain types of data. [DIS; IEEE]

Simulation Manager. See: exercise manager. [DIS]

Simulation Process. The imitative representation of the actions of platform(s), munitions(s), and life form(s) by computer program(s) in accordance with a mathematical model and the generation of associated battlefield entities. May be fully automated or

partially automated. In the latter case, the human-in-the-loop injects command-level decisions into the process and is not intended to be a “trainee.” [DIS]

Simulation Support Entity. Processing modules used to support, control, or monitor the simulation environment, but which do not actually exist on the battlefield. This includes battlefield viewing devices for controllers or exercise observers such as the stealth vehicle, the plan view display, after action review systems, and simulation control systems. [DIS; MSETT]

Simulation Time. (1) a simulation’s internal representation of time. Simulation time may accumulate faster, slower, or at the same pace as sidereal time. (2) The reference time (e.g., Universal Coordinated Time) within a simulation exercise, this time is established ahead of time by the simulation management function and is common to all participants in a particular exercise. [DIS; IEEE]

Simulator. (1) A device, computer program, or system that performs simulation. (2) For training, a device which duplicates the essential features of a task situation and provides for direct practice. (3) For Distributed Interactive Simulation (DIS), a physical model or simulation of a weapons system, set of weapon systems, or piece of equipment which represents some major aspects of the equipment’s operation. [DIS]

SIMWORLD. A collection of specifications that defines the algorithms and models incorporated in a class of simulation entities. It defines the battlespace terrain modeling algorithms used, atmospheric/bathyspheric models employed, electromagnetic and acoustic spectrums recognized, fidelity characteristics, time reference, supported classes of interactions, etc. It does not include the data bases which populate those models and algorithms. Those data are found in the Battlespace data base. [MSETT]

Single Point-of-Entry. The organization (s) responsible for entering data values for a data element.[DoD 8320.1-M]

Site. (1) An actual physical location at a specific geographic area, e.g., the Ft. Knox Close Combat Test Bed (CCTB) which can contain a single cell, multiple cells, or only part of a cell. (2) A node on the Distributed Interactive Simulation (DIS) long haul network which can contain a single cell, multiple cells, or only part of a cell. (3) A level of configuration authority within a DIS exercise. [DIS]

Site Manager. The individual responsible for the maintenance and operation of the simulators and local area network operations to support the requirement of the users. Additional responsibilities include: providing appropriate terrain; safety; data collection; and providing appropriate information for training feedback such as after action reviews and take-home packages. [DIS]

Slow Time. The duration of activities within a simulation in which simulated time advances slower than actual time. [DIS]

Smoothing. Interpolation of the previous state of an entity (location, velocity, etc.) to the current state, creating a smoothed transition between two successive entity state updates. [DIS]

Software Interface Standards Development. The development of a standard software interface that allows simulations using different software to communicate with each other. This is done by developing Protocol Data Units (PDUs) that specify the format and structure of data that will be transferred on the DSI. These PDUs standardize simulation output and establish the conversion requirements. [Army Mstr Plan]

Software Model. A symbolic model whose properties are expressed in software; for example, a computer program that models the effects of climate on the world economy. Contrast with: graphical model; mathematical model; narrative model; tabular model. [DIS; IEEE]

Span. The scale of the domain, that is global, theater, regional, local, individual. Description of the span is often subjective.

Specific Domain. The precise set of possible values of an attribute (data element). [DoD 8320.1-M-X]

Stability. Constancy of purpose; steadfastness. Reliability; dependability. [DoD 8320.1-M-3]

Stabilized-Variable Model. A model in which some of the variables

are held constant and the others are allowed to vary; for example, a model of a controlled climate in which humidity is held constant and temperature is allowed to vary. [DIS; IEEE]

Standard. A rule, principle, or measurement established by authority, custom, or general consent as a representation or example. [DOD 5000.59-P]

Standard Data Element. Data element registered IAW DoD data administration procedures. [DoDD 8320.1]

State. (1) The internal status of a simulation entity, e.g. fuel level, number of rounds remaining, location of craters, etc. State messages are used to start and restart entities or to update entities concerning the dynamic changes in the environment in their area of interest. See also: simulation entity. (2) A condition or mode of existence that a system, component, or simulation may be in; for example, the pre-flight state of an aircraft navigation program or the input state of given channel. (3) The values assumed at a given instant by the variables that define the characteristics of a system, component, or simulation. Syn: system state. See also: final state; initial state; steady state. [DIS]

State Machine. A model of a system in which all values are discrete, as in a digital computer. [IEEE; DIS]

State Transition. A change from one state to another in a system, component, or simulation. [DIS; IEEE]

State Variable. A variable that defines one of the characteristics of a system, component, or simulation. The values of all such variables define the state of the system, component, or simulation. [DIS]

Static Model. A model of a system in which there is no change; for example, a scale model of a bridge, studied for its appearance rather than for its performance under varying loads. [DIS; IEEE]

Steady State. A situation in which a model, process, or device exhibits stable behavior independent of time. [IEEE; DIS]

Stealth Viewer. A component that provides the capabilities for visually observing a DIS exercise without participating in the DIS

exercise interaction. [DIS]

Stimulate. To provide input to a system in order to observe or evaluate the system's response. [DIS; IEEE]

Stimulation. Stimulation is the use of simulations to provide an external stimulus to a system or subsystem. An example is the use of a simulation representing the radar return from a target to drive (stimulate) the radar of a missile system within a hardware/software-in-the-loop simulation. [DSMC 1]

Stimulator. (1) A hardware device that injects or radiates signals into the sensor system(s) of operational equipment to imitate the effects of platforms, munitions, and environment that are not physically present. (2) A battlefield entity consisting of hardware and/or software modules which injects signals directly into the sensor systems of an actual battlefield entity to simulate other battlefield entities in the virtual battlefield. [DIS]

Stochastic. Pertaining to a process, model, or variable whose outcome, result, or value depends on chance. Contrast with: deterministic. [IEEE; DIS]

Stochastic Model. A model in which the results are determined by using one or more random variables to represent uncertainty about a process or in which a given input will produce an output according to some statistical distribution; for example, a model that estimates the total dollars spent at each of the checkout stations in a supermarket, based on probable number of customers and probable purchase amount of each customer. Syn: probabilistic model. See also: Markov-chain model. Contrast with: deterministic model.[DIS]

Stochastic Process. Any process dealing with events that develop in time or cannot be described precisely, except in terms of probability theory. [AFI 16-102; DSMC 1]

Structural Model. A representation of the physical or logical structure of a system; for example, a representation of a computer network as a set of boxes connected by communication lines. Contrast with: process model. [DIS; IEEE]

Structural Validation. The process of determining that the M&S assumptions, algorithms, and architecture provide an accurate representation of the composition of the real world as relevant to the intended use of the M&S. [DA PAM 5-11]

Subject Area. A major, high-level classification of data. A group of entity types that pertain directly to a function or major topic of interest to the enterprise. [DoD 8320.1-M]

Symbolic Model. A model whose properties are expressed in symbols. Examples include graphical models, mathematical models, narrative models, software models, and tabular models. Contrast with: physical model. [DIS; IEEE]

Symbology. A graphic representation of concepts or physical objects. [DoDD 8320.1]

Synthetic Battlefield. One type of synthetic environment. [DOD 5000.59-P]

Synthetic Environments (SE). Internetted simulations that represent activities at a high level of realism from simulations of theaters of war to factories and manufacturing processes. These environments may be created within a single computer or a vast distributed network connected by local and wide area networks and augmented by super-realistic special effects and accurate behavioral models. They allow visualization of and immersion into the environment being simulated. [DOD 5000.59-P; CJCSI 8510.01]

System. A collection of components organized to accomplish a specific function or set of functions. [IEEE]

T-1. Data communications service that supports 1.544 megabits per second operation. [USMC Mstr Plan]

T-2. Data communications service that supports 45 megabits per second operation. [USMC Mstr Plan]

Tabular Model. A symbolic model whose properties are expressed in tabular form; for example, a truth table that represents a Boolean logic “OR” function. Contrast with: graphical model; mathematical model; narrative model; software model.[DIS; IEEE]

Taxonomy. A classification system. Provides the basis for classifying objects for identification, retrieval and research purposes. [MORS SIMTAX]

Technical Data. Scientific or technical information recorded in any form or medium (such as manuals and drawings). Computer programs and related software are not technical data; documentation of computer programs and related software are. Also excluded are financial data or other information related to contract administration. [DoDI 5000.2]

Technical Infrastructure The internal framework that must be built to implement an operational service. [DoD 8320.1-M]

Three-Way Handshake. A process whereby two protocol entities synchronize during connection establishment. [MSETT]

Tightly Coupled. A condition that exists when simulation entities are involved in very close interaction such that every action of an entity must be immediately accounted for by the other entities. Several tanks in close formation involved rapid, complicated maneuvers over the terrain is an example of a tightly coupled situation. [MSETT]

Time-dependent event. An event that occurs at a predetermined point in time or after a predetermined period of time has elapsed. See also: conditional event. [DIS; IEEE]

Time-Slice Simulation. (l) A discrete simulation that is terminated after a specific amount of time has elapsed; for example, a model depicting the year-by-year forces affecting a volcanic eruption over a period of 100,000 years. Syn: time-interval simulation. See also: critical event simulation. (2) A discrete simulation of continuous events in which time advances by intervals chosen independent of the simulated events; for example, a model of a time multiplexed communication system with multiple channels transmitting signals over a single transmission line in very rapid succession. [DIS]

Time Step Models. Dynamic models in which time is advanced by a fixed or independently-determined amount to a new point in time, and the states or statuses of some or all resources are updated as of that new point in time. Typically these time steps are of constant size, but they need not be. [MORS SIMTAX]

Time Variable. A variable whose value represents simulated time or the state of the simulation clock.[DIS; IEEE]

Tracked Munitions. A munitions for which tracking data is required. By necessity, a tracked munitions becomes a simulation entity during its flight; its flight path is represented, therefore, by Entity State PDUs. [DIS; IEEE]

Translator. The translator is the portion of an actor that interacts with ALSP. Normally, this is new software that adds the ability to transmit information about objects modeled by the actor and to receive information about objects modeled by other actors and to ghost these objects. [ALSP]

Transmit Management. The control of the transmission rate to match the transmission media. The transmission rate is selected to reduce total network traffic. [DIS]

Typing. Typing is the enforcement of the class of an object, such that objects of different types may not be interchanged, or may be interchanged only in restricted ways. [DMSO 93 SAFOR Survey]

Unbundling. The process of unpacking a bundled Protocol Data Unit (PDUs) into multiple separate PDUs. Contrast with: bundling. [DIS]

Unicast. A transmission mode in which a single message is sent to a single network destination, i.e., one-to-one. [DIS; MSETT]

Unified Combatant Command (UCC). One of the unified combatant commands established by the President of the United States according to Title 10, United States Code. Also referred to as Combatant Commands. (UCCs include: U.S. Atlantic Command (abbreviated as USACOM); U.S. Central Command (abbreviated as USCENTCOM); U.S. European Command (abbreviated as USEUCOM); U.S. Pacific Command (abbreviated as USPACOM); U.S. Southern Command (abbreviated as USSOUTHCOM); U.S. Space Command (abbreviated as USSPACOM); U.S. Special Operations Command (abbreviated as USSOCOM); U.S. Strategic Command (abbreviated as USSTRATCOM); and, US Transportation Command (abbreviated as USTRANSCOM)). [DoDD 5000.59; DOD 5000.59-P; DoDI 5000.XX]

Unit. (1) An aggregation of entities. (2) A basis of measurement. [DIS; IEEE]

Unit Conversion. A system of converting measurement from one basis to another; for example, English/metric, knots/feet per second, etc. [DIS]

User. Military, industrial, or academic organizations requiring access to the Distributed Interactive Simulation (DIS) network. Prior to use, they will appoint one point of responsibility for their use of the network. This person is the Exercise Manager. See also: Simulation Manager. [DIS]

User-Data. Conceptually, the part of a protocol data unit (PDU) used to transparently communicate information between the users of the protocol. [MSETT]

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Validation. The process of determining the degree to which a model or simulation is an accurate representation of the real-world from the perspective of the intended uses of the model or simulation. [DoDD 5000.59; DODI 5000.XX]

Validation Agent. The organization designated by the M&S sponsor to perform validation for a model, simulation, or federation of models and/or simulations. See also: verification and validation proponent. [DoDI 5000.XX]

Validity. The quality of maintained data that is found on an adequate system of classification (e.g., data model) that is rigorous enough to compel acceptance.[DoD 8320.1-M; DoD 8320.1-M-3]

Variable. A quantity or data item whose value can change. See also: dependent variable; independent variable; state variable. Contrast with: constant. [IEEE; DIS]

Verification. The process of determining that a model or simulation implementation accurately represents the developer's conceptual description and specification. Verification also evaluates the extent to which the model or simulation has been developed using sound and established software engineering techniques. [DOD 5000.59-P; DoDD 5000.59]

Verification Agent. The organization designated by the M&S sponsor to perform verification for a model, simulation, or federation of models and/or simulations. See also: verification and validation proponent. [DoDI 5000.XX]

Verification and Validation (V&V) Proponent. The agency responsible for ensuring V&V is performed on a specific model or simulation. [DIS]

Vignette. A self-contained portion of a scenario. [DIS]

Virtual. Refers to the essence or effect of something, not the fact. [DSMC 2]

Virtual Battlespace. The illusion resulting from simulating the actual battlespace. [DIS]

Virtual Images. Visual, auditory and tactile stimuli that are transmitted to the sensory end organs so they appear to originate from within the three-dimensional space surrounding the user. [DSMC]

Virtual Modeling and Simulation. A synthetic representation of warfighting environments patterned after the simulated organization and operations of actual military units. Differences in the representation of the simulated battlefield (i.e., whether real world, computer generated, or interactive players in simulators) are transparent to the participants who interact with their particular representation of the warfighting environment. [DA PAM 5-11]

Virtual Network. The interconnection of DIS cells by any communications means which provide the necessary network services to conduct an exercise.[DIS; MSETT]

Virtual Prototype. A model or simulation of a system placed in a synthetic environment, and used to investigate and evaluate requirements, concepts, system design, testing, production, and sustainment of the system throughout its life cycle. [DoD 5000.59-P]

Virtual Reality. The effect created by generating an environment that does not exist in the real world. Usually, a stereoscopic display and computer-generated three-dimensional environment giving the immersion effect. The environment is interactive, allowing the participant to look and navigate about the environment, enhancing the immersion effect. Virtual environment and virtual world are synonyms for virtual reality. [DSMC 2]

Virtual Simulation. See Live, Virtual, and Constructive Simulation. [DoD 5000.59-P]

Virtual Time. See: simulated time. [DIS]

Virtual World. See: synthetic environment. [DIS]

Visualization. The formation of an artificial image that cannot be seen otherwise. Typically, abstract data that would normally appear as text and numbers is graphically displayed as an image. The image can be animated to display time varying data.[DSMC 2]

Visual Stealth. A component that provides the capabilities for visually observing a Distributed Interactive Simulation (DIS) exercise without participating in the DIS exercise interaction. [DIS]

Glossary - W

Warfare Simulation. A model of warfare or any part of warfare for any purpose (such as analysis or training). [DIS; MORS SIMTAX]

War Game. A simulation game in which participants seek to achieve a specified military objective given pre-established resources and constraints; for example, a simulation in which participants make battlefield decisions and a computer determines the results of those decisions. See also: management game. Syn: constructive simulation; higher order model (HOM). [DIS; IEEE]

White Box Model. See: glass box model. [DIS]

Wide Area Network (WAN). A communications network designed for large geographic areas. Sometimes called Long-Haul Network. [DIS; IEEE 1278.3]

World Coordinate System. The right-handed geocentric Cartesian system. The shape of the world is described by the WGS 84 standard. The origin of the world coordinate system is the centroid of the earth. The axes of this system are labeled X, Y, and Z, with: the positive X-axis passing through the Prime Meridian at the Equator; the positive Y-axis passing through 90 degrees East longitude at the Equator; and the positive Z-axis passing through the North Pole. [DIS; IEEE]

World Geodetic System 1984 (WGS 84). 1984 version of World Geophysical Society Standard earth, mass, and surface distribution model. [DIS]

World View. The view each simulation entity maintains of the simulated world from its own vantage point, based on the results of its own simulation and its processing of event messages received from all external entities. For Computer Generated Forces, the world view is the perceptions of the participating humans. For manned simulators or real vehicles, the world view is the perceptions of the participating humans. [DIS; MSETT]

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Glossary - X

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Glossary - Y

Yoked Variable. One of two or more variables that are dependent on each other in such a manner that a change in one automatically causes a change in the others. [DIS; IEEE]

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Glossary - Z

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